Woodlot/Agroforestry Management Course Development Study

September 2001

Final Report

Acknowledgments

The Woodlot/Agroforestry Management Course Development Committee expresses its appreciation to all the organizations, businesses and individuals that have contributed time and effort to make this study possible.

This report would not have been possible without the participation of the businesses, organizations and individuals who took time to meet and speak with the researchers on many aspects of the woodlot management in Saskatchewan. We thank all those who participated in the survey and focus group presentations.

Members of the Course Development Committee are to be commended for the time, effort, guidance and support they contributed to the research and writing of this report. Their knowledge and commitment to the industry was invaluable throughout the study.

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[1] Trimension Training & Consulting Group would like to acknowledge the research support of Tandra Fraser and Deane Kasokeo (summer students with CSALE) and thank them for their valuable assistance on this report.

Executive Overview

Introduction

The 2000-2001 Northeast Regional Needs Assessment Report identified a need for training and skill enhancement in the area of woodlot and agroforestry management. To assist in identifying opportunities and related training needs, an Woodlot/Agroforestry Management Course Development Committee was established with representatives from:

- Cumberland Regional College (CRC);
- East Central Agroforestry Group;
- Farm Woodlot Association of Saskatchewan;
- North West Regional College (NWRC);
- Parkland Agroforestry Products Inc.;
- Saskatchewan Agriculture and Food (SAF);
- Saskatchewan Environment and Resource Management (SERM);
- Saskatchewan Institute of Applied Science and Technology (SIAST), Woodland Campus;
- University of Saskatchewan (Centre for Studies in Agriculture, Law and the Environment); and,
- Forestry Training Sub-Committee.

It was the intent of the partners assembled as a committee to develop a credit program made up of specialized courses that would address the training needs of woodlot/ agroforestry managers. The work was to be undertaken in three phases: Phase I: the research; Phase II: program development; and Phase III: the actual delivery of the courses.

This report presents the results of the research undertaken by Trimension Group in fulfillment of the contract with Cumberland Regional College on behalf of the Woodlot/Agroforestry Management Course Development Committee to complete Phase I activities.

Methodology

Trimension Group carried out primary and secondary research as part of the study. Primary research results were validated through focus groups conducted with participants involved in the industry.

The following provides a brief description of the steps taken to complete the study and produce the final report:

Literature Review

A literature review was completed with the objective of providing the Course Development Committee with the background information necessary to understand the current situation of woodlot and agroforestry management practices in Saskatchewan and the potential to develop an industry with an increase in training. The information for the literature review was obtained from various sources including published and unpublished reports.

Education and Training Database

Research was conducted to develop and compile a database of education and training programs for the Saskatchewan woodlot and agroforestry management. The database included programs offered on a national and international level. The institutions, the course description and the contact information are included. In Saskatchewan, no comprehensive training exists in woodlot and agroforestry management, although there are several relevant resources and courses available. These are provided by SIAST, the University of Saskatchewan and Farm Woodlot Association of Saskatchewan (FWAS), and are included in this report.

Survey

In order to gain a broad understanding of the training and access to information requirements for a growing provincial woodlot industry, Trimension Group developed two survey instruments in consultation with the Woodlot/Agroforestry Course Development Committee. The first survey was conducted by telephone in mid-June, 2001, and was directed at woodlot managers and people interested in selling wood. In order to survey farmers and landowners with wooded land, the Farm Woodlot Association of Saskatchewan, two agroforestry organizations and several First Nations Bands supplied the names of the possible participants. From these lists, a total of ninety (90) farmers and landowners were interviewed. A second survey was also administered by telephone in late June 2001, and was directed at businesses who purchase timber for wood fiber in the province from private woodlot owners. Seven (7) surveys were completed with the businesses.

Validation

In July 2001, a focus group was completed as part of the validation of the survey results. The focus group was made up of ten (10) producers who volunteered to participate during their respective telephone interviews.

Key Findings

Key findings provide for an overview of the industry and are a result of the primary and secondary research undertaken during the study. The key findings from the Literature Review and the Needs Assessment are as follows:

Literature Review and Review of Existing Courses and Course Materials

- In Canada, the majority of woodlot owners currently do not harvest wood from their land for strictly timber values. They do manage their forested land for reasons other than economic value.
- Currently, woodlot/forestry management courses are offered primarily in British Columbia and Nova Scotia with extension services being offered in Saskatchewan.
- In Saskatchewan, harvesting timber from private lands has the potential to be a profitable industry.
- In Canada, there are no courses offered specifically for agroforestry. However, there are woodlot management courses, including some in Nova Scotia and British Columbia. Saskatchewan provides no such formal training.
- Existing courses in woodlot and agroforestry management are offered extensively throughout the United States, Australia, Europe, Asia, and Africa.
- While there is no comprehensive, formal training courses available in Saskatchewan, there are other related resources and courses available through the University of Saskatchewan, SIAST and the Farm Woodlot Association of Saskatchewan.

Producer/ Woodlot Manager Needs Assessment Survey Results

The following summarizes the key results from the telephone survey and the focus groups:

Current Woodlot Management Practices

- One hundred percent (100%) of all landowners surveyed owned or leased wooded land representing 197,783 acres in Saskatchewan.
- The primary goals set out by the landowners for their land included passing it on to someone in the family, generating income, preserving the ecological aspects of the woodlot and using it for recreational purposes.
- A majority (63%) of respondents were undertaking woodlot management practices ranging from livestock shelter, to harvesting/processing, planting, thinning, developing trails, and conserving woodlots. The reasons given for their

decision to do so were primarily environmental (conserving their woodlot) or economical (to generate income).

- Those who were not undertaking any woodlot management practices provided several reasons for this: too expensive; too time-consuming; lack of market incentives; and, a lack of knowledge about basic management practices.
- Just over half (57%) of those who were not currently undertaking woodlot management practices indicated that they were planning to in the near future.
- Seventy-nine percent (79%) of all respondents indicated that they were interested in learning more about woodlot management practices.
- The businesses surveyed agreed that more information on training/management practices would benefit both private landowners and the businesses involved in this sector to produce a prosperous industry.
- The focus group concurred with the survey findings, suggesting that training is very important for woodlot managers in Saskatchewan.

Training Requirements

- For the most part, the respondents have not been seeking advice on managing their wooded land. Those seeking advice have gone to the Farm Woodlot Association of Saskatchewan, the Agroforestry organizations and training providers such as SIAST and the regional colleges. Others have simply found the information themselves in books and over the Internet.
- The majority of the respondents were unsure and in some cases unaware of the type of training that would be needed. This was largely due to the fact they are unaware of the potential economic and aesthetic opportunities which exist from their native stands of trees on their wooded lands. When explained, many indicated there would be a need for basic wooded land management training
- The focus group participants indicated there was a need for very basic introductory support services more so than actual courses, which would provide the potential managers with the basic information on how to first determine the benefits of getting into woodlot management. This service would be in the form of one-on-one visitations, supplemented with workshops/information sessions. The survey results indirectly reflected this need as well.
- In terms of what they would specifically like to have training in, the respondents saw a general need for all four components discussed by the Woodlot/Agroforestry Management Course Development Committee: basic business development, the environment, and both basic and intensive management practices.
- The majority of the businesses surveyed agreed that training in intensive management practices and business development would assist private landowners in managing their woodlots.

Provision of Training

- Ninety-one percent (91%) of respondents indicated that they would take advantage of training if it were available, with informal training (non-credit) being the preferred choice of over 73%.
- The training format preferred would be a combination of self-study/classroom and field exercises.
- The optimal time to provide this training would be in the winter.
- Three main reasons why this training may be difficult for some to participate include: too expensive, too time-consuming and reluctance to travel.
- The focus group indicated a preference for having the option of participating in either a credit or non-credit class with similar content.
- The focus group would like to see the course accredited by an institution such as SIAST or one of the universities, and be recognized by the industry.

Gap Analysis

As previously discussed, there are no woodlot and agroforestry management courses presently being offered in Saskatchewan. According to the survey and focus group results, not enough training is being provided to Saskatchewan private forest landowners. The findings show that Saskatchewan needs a basic, technical course that can be offered in both a credit and non-credit format. This course needs to be accessible to landowners across the province, and although the survey respondents and focus group participants indicated that they are willing to pay for the training, the cost of the course should be kept at a minimum.

Training Module Development

The survey respondents and focus group participants identified a combination of self-study/classroom and field exercises as the preferred method of training format. Some of the suggested modules that should be developed to cover the important training areas include:

- Basic Management Practices (tree-planting, stand-tending, inventory and harvesting);
- Basic Business Development (potential profitability, marketing, planning, processing):
- Environment (health, wildlife, ecology, recreation); and,
- Intensive Management Practices (hybrid poplar, other agroforestry practices).

There are numerous existing programs, at the university, technical institute and regional college levels that could be modified to suit the needs of this sector. There are also

several courses and programs throughout North America that could serve as models when developing a course for Saskatchewan landowners/producers.

Delivery Methodology

Various formats and program modes of delivery currently existing in Saskatchewan could be used to provide woodlot and agroforestry management education and are described in Table 1. The goals of these organizations include making education more accessible to landowners and persons interested in woodlot and agroforestry management in Saskatchewan. This list provides a sampling of what program formats and delivery modes currently exist in Saskatchewan. These formats may very well serve and assist in the development of the specific modules.

Table 1: Saskatchewan Based Training Programs

Institution/ Organization	Program	Delivery Mode	Description
University of Saskatchewan	Certificate in Agriculture (CAP)	Off-campus home study (some laboratory meetings in Saskatoon)	Each course requires 6-8 hours to complete assignments. A certificate of completion is awarded upon passing the final examination.
Agricultural Institute of Management in Saskatchewan (AIMS)	Six courses are offered	Quality farm business management education is offered in a user friendly Internet based environment.	Courses include features such as: streaming audio and/or video, live chat, bulletin board, personal course specific e-mail accounts, printable course contents, interactive quizzes with instant feedback, long answer questions, and ability to track your progress.
Saskatchewan Institute of Applied Science & Technology (SIAST)	Various	Various	Education, training and services are offered and/or administered from four urban campuses in Saskatchewan: Kelsey Campus in Saskatoon, Palliser Campus in Moose Jaw, Wascana Campus in Regina and Woodland Campus in Prince Albert. SIAST offers learning in a variety of methods including: certificates, diplomas, apprenticeships, continuing education, distance education, extension programs, courses and workshops.
Saskatchewan Indian Institute of Technologies (SIIT)	Various	Various	The Saskatchewan Indian Institute of Technologies (SIIT) offers training and education programs to First Nations adults in Saskatchewan. SIIT delivers a variety of programming across the province.
Saskatchewan Regional Colleges	Various Include: Farm Business Management,	Various	Saskatchewan Regional Colleges provide post-secondary education and training opportunities to residents in their local communities. The Regional Colleges throughout Saskatchewan offer a number of programs and resources.
Farm Woodlot Association of Saskatchewan	Various	Extension	Develop and deliver programs to woodlot owners. They offer visits and consultations, management planning and plan implementation, workshops, educational material, research, etc.

Recommendations

The following recommendations have been developed in order for the Woodlot/Agroforestry Management Course Development Committee to undertake and implement:

- Based on the survey and focus group results, it was found that there is a need for a low-cost, introductory course in basic woodlot and agroforestry management in Saskatchewan.
- The introductory course should be developed as non-credit, while a similar credit course should be considered for the future.
- It is important that the introductory courses be inexpensive (no more than $350/course), short in length, and easily accessible to land managers across the province.
- On-site consultations with land managers should be encouraged, both to provide expertise as well as to encourage participation in further training courses, whether they are credit or non-credit.
- Enhance partnerships with First Nations to address awareness and needs, as there is a need to explore opportunities to enhance and develop strategies that will encourage First Nations' bands in the province to take advantage of wooded land management practices.
- Develop and implement a comprehensive communication strategy, with distribution of the full report to key stakeholders, focus group participants and First Nations land managers. The Executive Overview should be made available to all parties interested, with the full report being available upon request.
- Enhance the Woodlot/Agroforestry Management Course Development Committee for the continuation and sustainability of long term human resource planning.

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1.0 Introduction

The 2000-2001 Northeast Regional Needs Assessment Report identified a need for training and skill enhancement in the area of woodlot and agroforestry management. Much of the land identified in the report, particularly in the Northeast area of the province, is transition land between forest and farmland and as such, could be used to produce and harvest timber as well as the traditional agricultural crops. Training and expertise is required to manage and market, in a sustainable and profitable manner, the timber and related resources on this land. Although this report identified the need in the north-east, it was determined that it was applicable throughout the province. A province wide project, involving organizations from various areas of Saskatchewan was proposed. To assist in identifying opportunities and related training needs, a Woodlot/Agroforestry Management Course Development Committee was established with representatives from:

- Cumberland Regional College (CRC);
- East Central Agroforestry Group;
- Farm Woodlot Association of Saskatchewan(FWAS);
- North West Regional College (NWRC);
- Parkland Agroforestry Products Inc.;
- Saskatchewan Agriculture and Food (SAF);
- Saskatchewan Environment and Resource Management (SERM);
- Saskatchewan Institute of Applied Science and Technology (SIAST), Woodland Campus;
- University of Saskatchewan (Centre for Studies in Agriculture, Law and the Environment); and,
- Forestry Training Sub-Committee

It was the intent of the partners assembled as a committee to develop a credit program made up of specialized courses that would address the needs of the agroforestry sector. The work was to be undertaken in three phases: Phase I: the research, Phase II: program development, and Phase III: the actual delivery of the courses.

The purpose of the three-phase project was to develop a program that accomplished the following objectives:

- To provide the target audience with the technical skills required to practice sound resource management independently;
- To encourage the development of small scale forestry in the agricultural sector;
- To promote a healthier landscape; and
- To develop courses applicable to the Saskatchewan woodland outside of the provincial forest.

Accordingly, a proposal for funding was submitted by Cumberland Regional College on behalf of the Woodlot/Agroforestry Management Course Development committee to

Saskatchewan Post-Secondary Education and Skills Training. The funding request was to carry out the activities as listed in Phase I of the project, namely:

- A Literature Review of existing resources;
- A Needs Assessment of producers including a survey of their needs;
- Completion of a gap analysis to determine the gap between what resources are existing and what resources are needed;
- To determine modules to be developed;
- To research best modes of delivery; and,
- To research potential course costs, funding sources, affordability for the client.

The funding request was granted and a call for proposals resulted in Trimension Group being awarded the contract to carry out Phase I activities.

This report presents the results of the research undertaken by Trimension Group in fulfillment of the contract with Cumberland Regional College on behalf of the Woodlot/Agroforestry Management Course Development Committee to complete Phase I activities.

2.0 Literature Review

2.1 Overview of Private Forestlands and Woodlot Management in Canada

According to Natural Resources Canada, forests cover 45% of Canada's landmass. Private landowners own 6% of Canada's total forested land, but their forests are generally productive and of high quality. In fact, private owners hold 10% of all forested land capable of producing commercial timber.

Private forest lands are critical to Canada's economic, ecological and spiritual health.

Estimate Average Size of Private Woodlots (hectares)

NFLD	PEI	NS	NB	QUE	ONT	MAN	SASK	ALTA	BC
27	18	50	40	50	27	32	59	124	N/A*

* There is no reliable estimate of the average size of privately owned woodlot in British Columbia as woodlot holdings are extremely diverse, ranging from 20 to 15,000 hectares. (Natural Resources Canada).

Unlike industrial owners of forest land, most private landowners place little emphasis on the timber value of their forests. According to Natural Resources Canada, the majority

of Canadian woodlot owners do not harvest any wood from their land. Thus, they own and value their forested property for a range of reasons that have little to do with timber. These include:

- Recreational purposes: trails for horseback riding, snowmobiling, skiing, hiking, fishing, hunting, bird watching, etc.;
- Creation of shelterbelts for farmland;
- Production of non-timber products;
- Food products (wild mushrooms, berries, oils);
- Medicinal, pharmaceutical products;
- Floral and greenery products; and,
- Craft products.

2.2 Overview of Woodlots and Agroforestry in Saskatchewan

There is one provincial Woodlot Association and two local agroforestry groups in Saskatchewan. The Farm Woodlot Association of Saskatchewan is dedicated to providing its members and clients with woodlot management information and training. This technical support includes information on ecological processes, environmental protection and market information. The Prairie Farm Rehabilitation Association (PFRA) provides a small amount of tree seedlings to woodlot owners. The Forest Industries Safety Association Inc. provides safety training to industry groups only, while TREEmendous Saskatchewan Foundation Inc. provides some tree seedlings to landowners. For specific purposes, Parkland Agroforestry and the East Central Agroforestry Group are localized landowner groups who have organized with the hopes of selling their timber for wood fiber. Both groups have done some inventory work for the purpose of selling their wood.

Some work has been done in the province examining the potential of the agroforestry industry in Saskatchewan. An Opportunity Group is looking at an Agroforestry Sector Development Strategy. The group has been formed by Saskatchewan Agriculture and Food. The group is composed of members of the forestry industry, the University of Saskatchewan, Saskatchewan Research Council, Saskatchewan Environment and Resource Management, Saskatchewan Agriculture and Food, Saskatchewan Economic & Cooperative Development, Crown Investment Corp., Farm Credit Corp., Saskatchewan Crop Insurance and the PFRA Shelterbelt Centre. The group is currently examining agroforestry issues such as poplar propagation, clonal testing, growing trees, carbon credits, wood cellulose use, as well as agroforestry education and technology transfer.

Timber harvested and replaced is a long-term, valuable, renewable and potentially financial resource for Saskatchewan. Attractive, renewable and sustainable enterprise projects can be created from the marginal agricultural lands available in the province to offer many benefits to the people and lands involved. However, a coordinated effort is

now needed to bring together the diverse interests now seen in the agriculture and forestry sectors to create this new economic base.

2.2.1 Saskatchewan First Nations Involvement in Agroforestry

In order to provide information on current First Nations involvement in the Saskatchewan agroforestry industry, Trimension contacted several band land managers. Presently, there are twenty-eight First Nations bands that have acquired Treaty Land Entitlement (T.L.E.). The Framework Agreement settles the land debt that is owed to these First Nations because they did not receive all the land they were entitled to under Treaties 4, 6, and 10. Thus, these First Nations bands must utilize the monies to buy land in Saskatchewan. Many of those bands contacted either have agricultural lands or forested lands. However, under treaty land entitlement, these bands are purchasing mainly agricultural lands. The land that is bought is primarily leased out to farmers or sitting idle because of the lack of farm industry viability and initiatives. Therefore, First Nations bands are looking for alternatives to better diversify their land for economical and environmental reasons.

A number of First Nations have contacted the *First Nations Agricultural Task Force* and the *University of Saskatchewan* to assist them in finding alternatives to better diversify agricultural and wooded lands that the First Nations bands own. Currently a few First Nations bands with the assistance of the *University of Saskatchewan* are working on pilot projects with Ducks Unlimited and a group of Organic Growers as alternatives for land use.

In May and June 2001, a representative from Trimension/CSALE met with the *First Nations Agricultural Task Force* in Saskatoon and Regina to bring awareness of the benefits of woodlot and agroforestry management practices. The participants were very receptive, and contacts were made with First Nations' bands that wanted more information on the concepts and a training program in the future. Many expressed the importance of diversifying the farmland for economical and environmental reasons through alternatives like agroforestry. In most cases, the First Nations bands that have "traditional woodlots" were preserving them or keeping them in their natural state, while in others, some bands were planting and harvesting trees for profit.

Creating awareness on the benefits of woodlot and agroforestry management practices for their people in providing revenues and preserving the environment is an important issue for the band managers interviewed. They are willing to have informative meetings to discuss the issues of their role in agroforestry that will benefit all wooded land owners in Saskatchewan.

3.0 Review of Existing Courses and Materials

As previously mentioned in this report, there are no formal woodlot and agroforestry management courses presently being offered in Saskatchewan. There are however, numerous organizations that provide information, educational materials, consulting services and informal workshops relating to various aspects of woodlot management. It was found that some of these programs are quite specific to one area, such as shelterbelts, horticulture and vocational forestry. The following list provides examples of these programs and information offered by various organizations in Saskatchewan:

3.1 Woodlot and Agroforestry Programs and Organizations in Saskatchewan

- **PFRA Shelterbelt Program -** Agriculture and Agri-Food Canada

The PFRA describes the Shelterbelt Program as "a permanent program for the distribution of seedlings for planting shelterbelts or for conservation and land reclamation projects in Manitoba, Saskatchewan, Alberta and the Peace River region of British Columbia. Technical assistance is available free of charge" (Source: http://www.agr.ca/pfra/shbproe.htm).
Eligible applicants are:

- bona fide farmers and producers;
- Federal and provincial government departments;
- municipal governments (villages, towns, cities);
- charitable organizations; and
- Band Councils or individuals planting trees on Indian Reserves.

Trees and shrubs are distributed free of charge but applicants must cover transportation costs. The Shelterbelt Centre is located in Indian Head, Saskatchewan and produces the trees and shrubs that are distributed.

- **The Saskatchewan Forest Industries Safety Association Inc. (SFISA)**

The SFISA works in partnership with employers and workers of Saskatchewan's forest industry. Their mission is to "identify and implement safety and health policies, practices and procedures that prevent and reduce human and economic losses arising from accidental causes".
Training programs and brochures are provided on:

- Safety Management (2 days)
- Conventional Logging (1 day)
- Chainsaw Safety in Sawmills (1 day)

They also provide Conventional Logger Certification and Safety Program Development. Other services the Saskatchewan Forest Industries Safety Association provides include worksite evaluation, noise level testing and consultation and accident investigations.

- **Woodlot Management Guide for the Prairie Provinces - The Farm Woodlot Association of Saskatchewan**

There are four main sections in the guide:

- Woodlot assessment
- Multiple land use
- Products/markets
- Woodlot management

This guide provides an introduction to woodlot management and small scale forestry and is intended to be used by people with limited knowledge as well as a technical resource for skilled resource people. It provides an overview of woodlot management but is not designed to answer all questions. It is not meant to be read from cover to cover but rather as a reference guide. The guide recommends landowners seek advice from other resource people, as well as attending courses and field days to become more informed.

- **The Farm Woodlot Association of Saskatchewan (FWAS)**

The FWAS information sources lists their services as:

- forest resource and technical information;
- a woodlot walk-through service, on site consultation with a woodlot extension person;
- fee for service management planning assistance and help implementing your operating plan;
- a quarterly newsletter 'In Your Woodlot' for members and subscribers; and,
- access to market information.

(source: Farm Woodlot Association of Saskatchewan, Spiritwood, SK. Additional Information: http:www.aginfonet.com/agricarta/main.html)

- **Integrated Resource Management - SIAST**

Integrated Resource Management is a diploma program. It provides knowledge and skill development in a variety of disciplines in the natural resource sector. These include

enforcing regulations, collecting and analyzing data, monitoring resource use and public relations.
You will receive training in:

- fish, wildlife, forestry and parks management
- applying Global Positioning Systems (GPS) and Geographical Information Systems (GIS) to resource management situations
- mapping, compassing and remote sensing
- air-photo use and interpretation
- applying statistics to resource management problems
- research design, analysis and technical reporting
- implementing quality control
- surviving in the wilderness
- operating and maintaining vehicles, boats and all terrain vehicles

To obtain your diploma, you must complete:

- the core, compulsory and 21 elective courses (that may allow you to obtain specialty certificates in Fisheries, Forestry, Parks Management and/or Wildlife areas).
- St. John's Ambulance First Aid and CPR Basic Rescuer training.

The program provides you with the opportunity to earn a SIAST diploma in Integrated Resource Management and potentially, a Bachelor of Science degree in Environmental Biology from the University of Regina. The joint degree/diploma program combines this program with five semesters of university study in Biology and Environmental Studies

♦ Forest Ecosystems Technology- SIAST Woodland Campus

Forest Ecosystem Technology is a diploma program. It provides the knowledge, skills and extensive field training needed to ensure success in meeting the challenges of ecosystem based forest management and protection in Saskatchewan. You will receive a broad ecological foundation. You will also develop communication, teamwork, technology and field skills. Comprehensive and hands on forestry skills development will be emphasized. The first year includes a common core of courses with the Integrated Resource Management Program.

♦ GIS for Resource Management- SIAST Woodland Campus

Geographic Information Science for Resource Management is a certificate program. Geographic Information Systems (GIS) use modern technology to automate, integrate, analyze and communicate spatially-based information. The program provides a working

knowledge and competency through a hands on approach to GIS and related technologies. These include:

- photogammetry
- Global Positioning Systems
- remote sensing
- computer programming
- database design in the context of resource management projects

♦ **Vocational Forestry - SIAST Woodland Campus**

This course places strong emphasis on practical training. It trains for employment in forest harvesting industry including planting, thinning, conventional and mechanical harvesting, and processing a variety of forest value added industries. Programs can be offered throughout the province depending on demand. A Statement of Achievement is issued upon completion. Courses include:

- Operate and maintain chain saws
- Plant trees
- Operate feller buncher
- Operate delimber

♦ **Forestry Technician – SIAST**

The Forest Technician Certificate program equips the student for a variety of work environments in the resource management for a wide range of forest value and practices. Graduates are well prepared for individual and team support roles in industry, government, consulting and entrepreneurial situations including resource and ecological surveys and analysis; and a spectrum of forest management activities such as forest renewal and maintenance, fire control and forest protection". Required courses include:

- Forest Maintenance
- Forest Harvest Practices
- GIS & GPS
- Regulations and Policy
- Resource Management
- Environment
- Safety

- **Integrated Forestry Worker Program- Saskatchewan Indian Institute of Technologies**

Currently offered solely in La Ronge, this course will train individuals in a variety of front line forest operations, including:

- Harvesting
- Hauling
- Road construction
- Forest planning and development
- Silviculture
- Environmental impact assessment
- Forest protection and manufacturing

Entrance requirements include the completion of grade 10, a valid driver's license, good physical condition and willingness to work outdoors and in the bush. The cost of the program, including books and supplies is $3250.00.

- **Prairie Horticulture Certificate Program- University of Saskatchewan**

This course was designed especially for use in the Prairie Provinces. There are four specializations to choose from:

- Fruit and vegetable production
- Greenhouse crop production
- Landscaping and arboriculture
- Nursery crop production.

All course materials are designed for home study. Materials include a comprehensive course guide, study guide, and laboratory manual when necessary. A total of eight course must be completed (360 hours or 36 credit weights) and reading course materials and doing assignments is the minimum requirement to receive a certificate. A certificate is awarded upon completion to students with greater than a 60% average. Admission requirements are the same as the Certificate in Agriculture Program (Please refer to Appendix B for full details). There is an arboricultural class within the program that covers principles and "how to's" on installation, care, and maintenance of trees and shrubs. The effect of the environment on growth and development of woody plants is addressed.

- **Special Forest Products Market Analysis for Saskatchewan Timberlands Division, Weyerhaeuser Canada, Ltd.**

This report responds to the need for a study to determine potential market opportunities for non-timber products found in the Forest Management License Agreement area of Weyerhaeuser Canada, Saskatchewan Forest Management License Agreement area (FMLA). In an effort to explore added economic development and job creation opportunities in the area, the study results will, in part, be used to help select specific special forest products to be inventoried in the FMLA on an annual basis. Based on the study's market research results, species have been prioritized for possible filed inventory inclusion by Weyerhaeuser. Important discussion on possible opportunities for value-added product development utilizing the targeted special forest products is also detailed.

3.2 Potential Models for a Woodlot and Agroforestry Management Course in Saskatchewan

Because of the lack of comprehensive woodlot and agroforestry management courses in Saskatchewan, this research examined the need for such courses in the province. There are several courses in North America which could serve as examples to develop a woodlot and agroforestry management course in Saskatchewan. A review of existing woodlot and agroforestry management course materials, both national and international, was completed through an Internet search. The search focused mainly on formal training programs. Table 2 provides a brief outline of the courses found to have the most potential as models for a Saskatchewan based woodlot and agroforestry management training course, while Appendix A provides a more detailed description of these same courses. A complete review of courses currently offered with details including teaching, accreditation, and format of the program are listed in Appendix B. As well, a search of agroforestry courses and programs world-wide on the internet provided a list of some major woodlot and agroforestry management programs and associations. These are listed in Appendix C.

Table 2: Potential Models for Woodlot and Agroforestry Management Training Program in Saskatchewan

COURSE	CREDIT/ NON CREDIT	TUITION	DELIVERY METHOD	LENGTH	DIRECTED TO:	DELIVERED BY:
Woodlot Management Home Study Series	Non-credit	Free	10 Modules by mail or on-line	Own pace	Those who want to learn more about managing their woodlot	Nova Scotia Department of Natural Resources
Introduction to Silviculture Systems	Non-credit	Free	Workbook or online	Own pace	Students and practitioners	BC Ministry of Forests
Vancouver Island Master Woodland Manager	Non-credit	US$41.50	Workbook (8 modules)	Approximately 60 hours	Woodland owners on Vancouver Island	Forest Renewal BC Small Woodlands Program
Agroforestry, Permaculture & Planning	Certificate	$750	Classroom/field	2 weeks		Shades of Harmony Farm Kingston, Nova Scotia
Conserving Woodlands	Non-credit	$300	Home study	No completion deadline	Rural farmers	University of Guelph
Private Woodland Planner	Non-credit	Free Software	Home study (computer)		Non-industrial private forest land, First Nations Reserves	Small Woodlands Program Smithers, BC
Permanent Agriculture Resources	Non-credit		Workshop		Farmers, ranchers, gardeners, extension agents	Permanent Agriculture Resources Holualoa, Hawaii
Master Christmas Tree Grower Course	Non-credit	$20	Classroom	6 weeks (3 hours/week)	Beginning and Experienced Growers	North Carolina State University Extension Center
Master Tree Farmer 2001	Non-credit	$50	Satellite broadcast	7 weeks (3 hours/week)	Landowners	North Carolina State University Cooperative Extension
Woodland Options	Non-credit		Web-based course	Approximately 8 weeks	Forest Landowners	Virginia Forest Landowner Education Program
Australian TreeGrower Program Master		$100	Various	8 weeks	Landowners	Partnership b/t Department of Forestry & local groups
Agroforestry: Trees in Support of Agriculture	Certificate	3950 (pounds)	Classroom	5 weeks		Wye College and Oxford Forestry Institute

4.0 Training Needs Assessment

In order to gain a broad understanding of the training and access to information issues in the developing provincial private woodlot sector, Trimension Group developed two survey instruments in consultation with the Woodlot/Agroforestry Management Course Development Committee. The first survey was conducted by telephone in mid-June, 2001, and was directed at woodlot managers. A database of survey participants was developed with the assistance of the Farm Woodlot Association of Saskatchewan, Parkland Agroforestry Association, TREEmendous Saskatchewan Foundation Ltd., the East-Central Agroforestry Group and several First Nations land managers. From these lists, a total of 90 farmers and landowners were called. Ten of these surveys were conducted with First Nations Band land managers. A second telephone survey was also administered by telephone in late June 2001, and was directed at seven companies who purchase trees or wood fiber in the province.

Producer/ Landowner Survey Results

As members of the organizations listed above, each of the telephone survey respondents is actively practicing woodlot management, or has expressed an interest in pursuing these practices. The survey sought to identify what is currently being done in the province, what type of information or training requirements are needed to improve the sector, and how best to deliver this information.

Section One: What are you currently doing in the area of wooded land management practices?

4.1 ***Do you own or lease any wooded lands?*** n=90

One hundred percent (100%) of respondents owned or leased wooded lands.

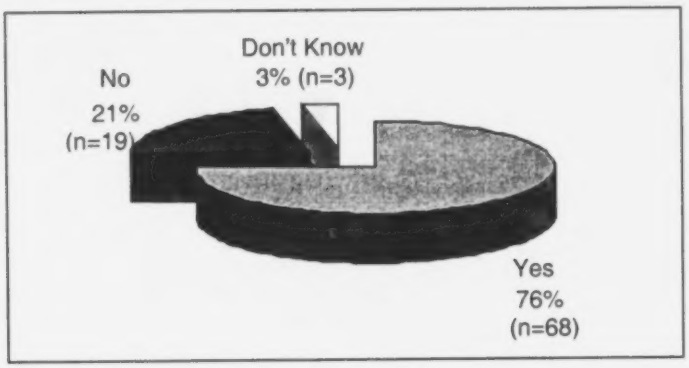
4.2 ***How many acres of your land are wooded?*** (Please estimate if unsure) n=90

The respondents have a total of 170,603 acres of wooded land. The average of all respondents is 1,896. The number of acres of wooded land per participant ranged from 2 acres up to 102,500 acres.

4.3 *How many acres of wooded lands do you lease?* n=90

Twenty-two percent (22%) (n=19) of those surveyed lease a total of 27,180 acres of wooded land, for an average of 306 acres. The number of acres of wooded land leased per participant ranged from 0 acres to 10,000 acres. 88% (n=71) of respondents do not lease any wooded lands.

4.4 *Do you have any long-term goals for your wooded lands including passing your land on to someone in the family?* n=90

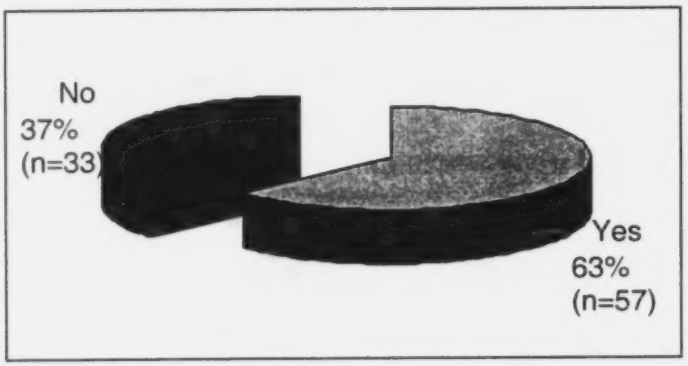


4.5 *What are your primary long-term goals?*

When asked to describe their primary long-term goal, the respondents provided various answers. The five most common of these were:

- Passing the wooded land on down to a family member (n=23);
- Harvesting the wood (selling the timber, harvesting Christmas trees, managing the woodlot) (n=22);
- Preserving the natural state of the wooded land for environmental, recreational, and ecological reasons (n=15);
- Contracting with industry (n=12); and,
- Leaving the wooded land as is (n=5).

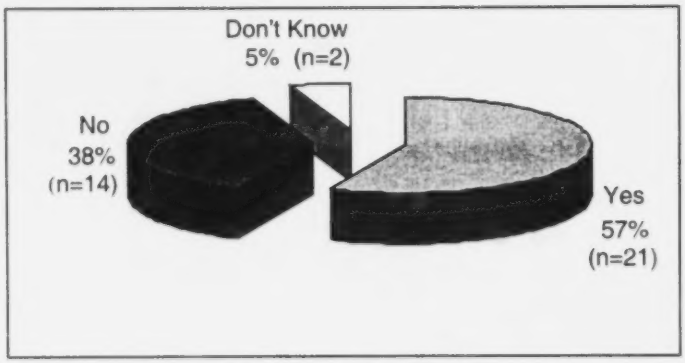
4.6 ***Are you currently undertaking any management practices on wooded lands?*** n=90 (If no, go to 4.9)



4.7 ***What are you doing now?*** n=57

Six main management activities being undertaken by the respondents include: planting (n=15), thinning (n=13); harvesting (either for timber or for firewood) (n=11); environmental/wildlife preservation (n=6); logging or horse logging (n=5); and either creating shelter or pasture land for cattle (n=3).

4.8 ***Are you planning to in the near future?*** n=37



Those respondents who indicated they are not presently undertaking any wooded land management (n=37, Question 4.6) were asked if they were planning on doing so in the near future. More than half (57%, n=21) of those respondents planned on undertaking some form of wooded land management in the near practice.

4.9 *Are there reasons why you are not undertaking any wooded land management practices?* n=41

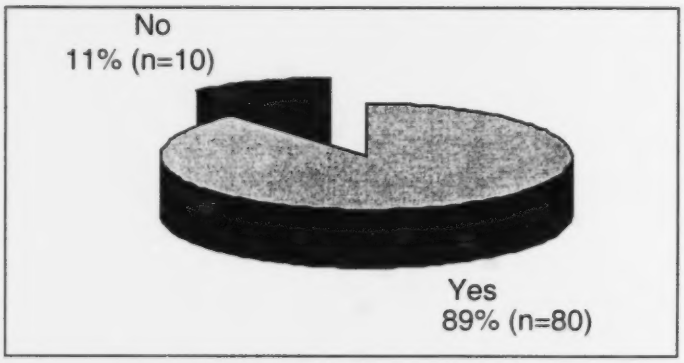
Of those respondents who do not presently undertake any wooded land management practices (n=41), the main reasons offered included: little economic incentive (n=9); lack of time and energy (n=7); lack of information and resources (n=5); and disinterest in wooded land management at this time (focusing on other areas of the farm) (n=2).

4.10 *What is the one specific primary reason for undertaking your wooded land management practices?* n=59

Of the 59 respondents who are presently undertaking management practices on their forested land, they provided three main reasons as to why they do so:

- Environmental reasons (sustainability, preserving the natural state of the forest, increase oxygen levels, shelter for wildlife) (n=36);
- Economic reasons (potential for revenue, added income) (n=19); and,
- Recreational reasons (walking trails, enjoyment of managing the wooded land) (n=4).

4.11 *Are you interested in learning more about wooded land management practices?* n=90



The majority of respondents (89%) (n=80) are interested in learning more about wooded land management.

Section Two: What information do you require?

4.12 *Where are you currently going/seeking advice regarding wooded land management?* n=90

Although many respondents indicated that they are either not able to access advice or are not actively doing so at this time (n=27), several other sources of information were provided. These include: the Saskatchewan Farm Woodlot Association (n=24); books, the Internet and by word of mouth (n=14); through education providers (SIAST, regional colleges) (n=5); Parkland Agroforestry Association (n=4); and government sources (SERM, Dept. of Agriculture) (n=4).

4.13 *What are the areas you see where training is needed?* n=90

Although the majority of the respondents indicated that they were uncertain about where training is needed, there were two main areas listed as those in which training is needed:

- Basic woodlot management practices (seeding, reforestation, harvesting, planting, harvesting wood in riparian areas, disease prevention and management) (n=36)
- Business management (economics of production marketing, land management plans, determining potential for revenue) (n=21)

Some of the respondents may have interpreted this question differently, as some respondents indicated that certain groups or institutions required more training. Specifically, the Government of Saskatchewan was listed as needing more research (n=4) and more involvement in promoting the woodlot and agroforestry industry (n=3), as well more involvement in promoting the preservation of natural forests for wildlife and recreational purposes (n=2).

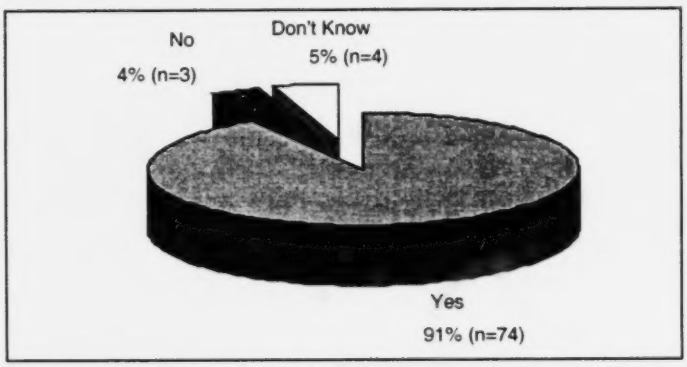
4.14 *Which of the following areas would you like to have training in?* n=90

Required Training	Number of respondents who chose this option
Environment	**47**
• Health	11
• Wildlife	23
• Ecology	26
• Recreation	10
Other Environment areas include: • Riparian area. • Maintenance of a woodlot and for game. • Carbon sequestering. • Carbon credits.	4
Other: • The sustainability of this will keep this project renewed to environment and industry. • Government changes and policies changes are very necessary.	2
Basic Management Practices	**43**
• Tree-planting	21
• Stand-tending	15
• Inventory	14
• Harvesting	23
Other Basic Management practice areas include: • Disease • Diversity of seasonal work • Sustainability • Woodlot Information • How to assess and develop what you have	5
Basic Business Development	**42**
• Potential Profitability	28
• Marketing	23
• Planning	10
• Processing	8
Other Basic Business Development areas include • Interested in knowing how to deal with industry for production and purchasing wood supply. • For sale to city lots	2
Intensive Management Practices	**32**
• Hybrid poplar	13
• Other Agroforestry practices (Agroforestry: integration of forest and agriculture practices) Includes things like multi-story cropping, snow fence, alley cropping, shelterbelts, windbreaks, etc.	3
Other Intensive Management Practices areas include: • Fruit tree cropping. • Multi-story cropping and alley cropping. • Multi-story cropping. • Reforestation. • Fruit trees.	5

Based on the responses listed in this table, it is clear that the respondents feel there is a need for training in the four main categories of the Environment, Basic Management Practices, Basic Business Development and Intensive Management Practices. Several respondents choose more than one area in which they see a need for training. As such, the sub-totals do not add up to 90. Many respondents chose a main category, and then provided an example, such as tree-planting, under the category of Basic Management Practices. Both answers were recorded.

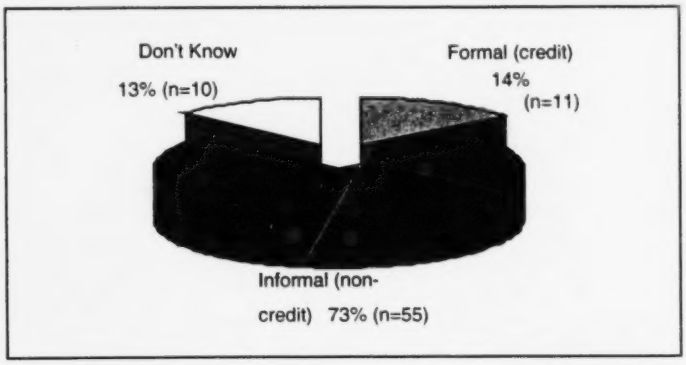
Section Three: How Can We Best Deliver the Information?

4.15 ***If wooded land management training were available, would you take advantage of it?*** n=81



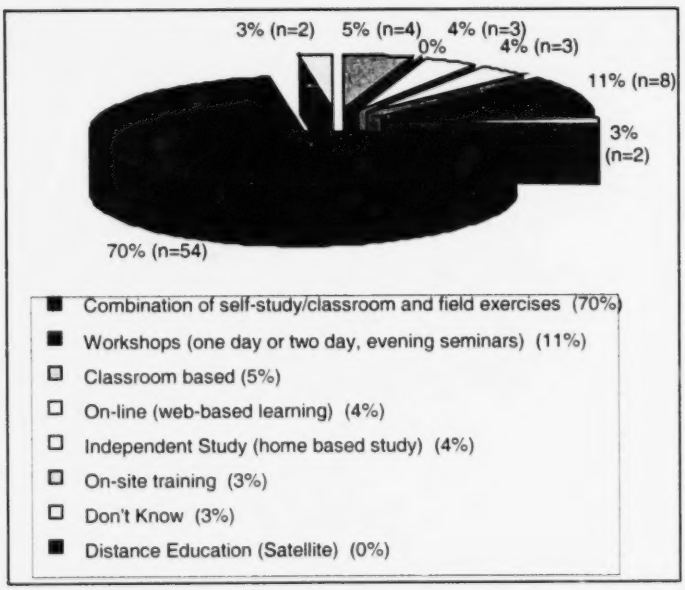
Of those respondents who indicated that they were interested in learning more about wooded land management (See Question 4.12, n=80), an overwhelming majority of respondents (91%) indicated that if training were available, that they would take advantage of it (n= 74).

4.16 *What type of training would you be most interested in?* n=76



Of those respondents who indicated that they would take training if it was provided, 73% of these (n=55) indicated that they would prefer that their training be in an informal or non-credit format. Two respondents who had indicated "don't know" as to whether they would take training if it were available (Question 4.16) answered this question. This is the reason for n=76.

4.17 *How would you like to take your training?* n=76



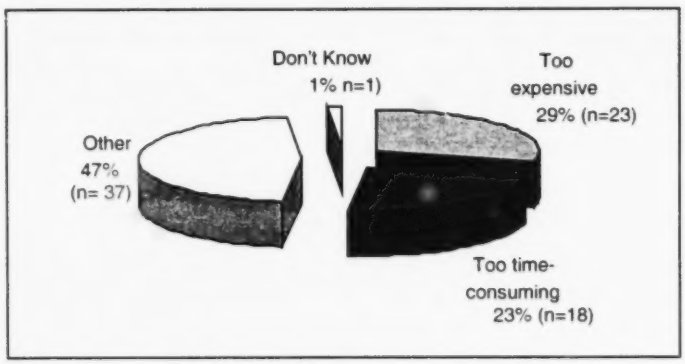
The combination of self-study/classroom and field exercises was chosen as the primary type of training format for the respondents (n=54). This was the case for both those who indicated that they would prefer formal (credit) programs as well as for those who would like to have informal (non-credit) training. The second most preferred option was workshops with 11% (n=8). The distance education (satellite) was not an option chosen by any of the respondents.

4.18 *What season is the best time of year for you to take this training? (more than one answer possible)*

Best Season	Percent who chose season
Winter	61% (n=55)
Fall	17% (n=15)
Summer	16% (n=14)
Spring	13% (n=12)

The winter season was chosen by 61% of the respondents as the optimal time to take their wooded land management training. It is assumed that this majority is based on the fact that farmers would be too busy during the other three seasons with their farming operations to attend or focus on their wooded land management training.

4.19 *What are some of the barriers that would prevent or discourage you from taking wooded land management training?* n=79



These responses are based on a number of extenuating circumstances, including:

- Having to travel a substantial a distance for education (n=15);
- Lack of available time (n=7);
- Scheduling conflicts with work or family activities (n=5);
- Health reasons (n=3);

- Uncertain if training would be worth it (n=3);
- Course outline may not be of interest (n=2);
- Not a priority (n=2).

5.0 Survey of Forest Product Businesses

Businesses were surveyed in order to determine their willingness to purchase wood from private woodlot owners and about their opinion on gaps in woodlot and agroforestry management training in Saskatchewan. Seven people were surveyed from both small and larger companies in Saskatchewan involved in wood processing or purchasing. A goal of ten surveys was not reached because of a combination of unwillingness from businesses to participate and difficulty in contacting certain industry representatives.

5.1 *Do you buy any wood from independent/private wood producers who own or lease any wooded lands?* n=7

- Four businesses replied "yes"
- Three businesses replied "no"

5.2 *If so, what factors do you, as the purchaser need to consider when purchasing wood fiber from a private woodlot owner, as compared to permit or forest management agreement (FMA)?* n=4

Of the businesses that answered "yes" to Question 5.1, three of the four listed quality, price and availability of access as the factors they need to consider when purchasing wood fiber from private woodlot owners. One of the businesses surveyed indicated the reason they purchase wood from the private landowners is because they are not bound by the same conditions and regulations as Crown leased land and the Forest Management Act that applies to these forests.

5.3 *In terms of supply and demand, what do you need from private woodlot managers, and can this demand be met by them?* n=7

The businesses surveyed indicated that, although they believe their needs can be met in the short term, it is difficult to foresee any long-term, sustainable supply in the province.

5.4 *Why do you not purchase wood fiber from private/independent wood producers?* n=7

The businesses agreed that the reason they are not currently purchasing wood fiber from private wood producers is due to the fact that they have not been approached by private wood producers to do so.

5.5 *What are some of the things you would have to consider in order to buy wood from private producers?* n=7

Quality, price and accessibility were the listed as the three most important things businesses would have to consider when buying wood fiber from private producers.

5.6 *What do you see as important knowledge for landowners to produce and supply you with wood?* n=7

The respondents listed the three most important issues for private landowners to consider when supplying their wood were:

- the ability to process their wood fiber properly;
- for them to understand quality and how to optimize their returns; and
- to explore what options are available them for their respective private land (location, quality, types of trees, possible contracts with industry etc.).

5.7 *Which of the following areas would you like to see training in?* n=7

(more than one answer possible)

Businesses replied accordingly:

Treeplanting	4
Basic management practices	3
Stand-tending	3
Inventory	2
Harvesting	2
Environment	2
Health	2
Wildlife	2
Planning	1
Processing	1
Basic Business Development	1
Potential profitability	1
Marketing	1
Ecology	1
Recreation	1

"Intensive management practices" were not selected by any of the respondents.

5.8 *From your perspective, what are some of the issues producers will face if they go into woodlot and agroforestry management?* n=7

The respondents indicated that the two key issues producers will face if they go into woodlot and agroforestry management are the time-consumption and expense aspects of the management. Other issues included a lack of viable timber and a lack of public consultation/involvement. One business did not foresee any problematic issues for private woodlot managers.

5.9 *Do you see hybrid poplar or other intensively farmed trees as important future supply of wood for you?* n=7

The respondents provided various responses to this question. Three businesses answered that they did see intensively farmed trees as an important future supply of wood, while three companies were not sure of their importance. One respondent did not see hybrid poplar as an important supply of wood for their company.

In general, the companies indicated that they do not expect a lot in terms of supply and demand being met by private woodlot owners. One company indicated that the reason they do not currently purchase wood from independent producers is based on the fact that private producers have not approached them to do so. Another company does not buy wood from private producers because they produce their own wood for their sawmill.

The industries surveyed list the following as important knowledge for landowners in order to produce and supply wood:

- Basic Management practices (tree-planting, stand-tending)
- Ability to process properly
- Basic business development
- Environment (health, wildlife)

6.0 Gap Analysis

Based on the training needs of the survey respondents, as well as their selected preferred method of course delivery, there is no training institution or agency in Saskatchewan currently offering an woodlot and agroforestry management program that can respond to these needs. However, there are several education programs in the province that have the potential to be used as models to develop such course (See Table 1). Not only are there programs already established at both the university and technical institute level in Saskatchewan, there are also several programs throughout North America which can serve as examples (Table 2) when developing a similar course here in the province.

The program search that was conducted discovered that although there are adequate woodlot management programs in other areas of Canada and the world, there is not adequate training for Saskatchewan landowners. The survey conducted indicates that both industry and landowners agree that in Saskatchewan there is a need for training in the various areas of woodlot and agroforestry management.

There is a gap between the information found in the database and the needs identified in the survey. Saskatchewan needs a basic, technical, non-credit course that is adapted to Saskatchewan economic and environmental conditions.

7.0 Training Module Development

As identified in the survey, a combination of self-study/classroom and field exercises was chosen as the preferred method of training format for the respondents. This was the case for both those who indicated that they would prefer formal (credit) programs as well as for those who would like to have informal (non-credit) training.
Some of the suggested modules that could be developed to cover the important training areas include:

- Basic Management Practices
  - Tree-planting
  - Stand-tending
  - Inventory
  - Harvesting
- Basic Business Development
  - Potential Profitability
  - Marketing
  - Planning
  - Processing
- Environment
  - Health
  - Wildlife
  - Ecology
  - Recreation
- Intensive Management Practices
  - Hybrid Poplar
  - Other Agroforestry practices (included things like multi-story cropping, snowfence, alley cropping, shelterbelts, windbreaks)

From the results of the survey, woodlot owners felt that these were important areas where training is needed. Based on the review of existing courses and course material, several programs could be adapted and delivered by the following training institutions to meet the agroforestry or woodlot management needs:

- The Certificate in Agriculture (CAP) program at the University of Saskatchewan;
- The Agriculture Institute of Management in Saskatchewan (AIMS):
- Saskatchewan Indian Institute of Technologies (SIIT)
- Saskatchewan Regional Colleges
- Saskatchewan Institute of Applied Science and Technology (SIAST)
- Nova Scotia Department of Natural Resources Woodlot Management Home Study Series; and,
- Vancouver Island Master Woodland Manager Forest Renewal BC Small Woodlands Program.

These institutions could modify their programs to suit the needs of Saskatchewan's woodlot and agroforestry management training needs. The following describes some of the specific programs which have been deemed relevant:

7.1 *University of Saskatchewan, Department of Agriculture Certificates in Agriculture Program (CAP)*

The objective of the CAP program is to meet the educational needs of individuals, both men and women, whose farm, job, or family responsibilities make it inconvenient for them to register for on campus Diploma in Agriculture courses. Students can take courses for general interest or to meet the requirements of a specific Certificate program.

Each course requires approximately 6-8 hours per week to read course materials and prepare assignments. Some classes have a 1 or 2 day laboratory session in Saskatoon and may have periodic group meetings at learning sites throughout Saskatchewan. There is also a compulsory orientation before the beginning of the course.

There are two different certificate programs offered:

1. Crop Production Certificate
2. Farm Business Management Certificate

Fees include a $50 application fee and $324 per 3-credit course. 7 - 3 credit courses must be completed. Students in the CAP program are expected to write final examinations on pre-determined dates at pre-designed centres in the Prairie Provinces. If the student is unable to write the final examination at a regular centre, they may apply for establishment of a "special centre". The student must have a mark of 50% or better in all courses to receive a Certificate.

7.2 *Agriculture Institute of Management in Saskatchewan (AIMS)*

AIMS has an online training centre that is dedicated to providing quality farm business management education in a user friendly Internet based environment. The courses have been structured specifically for online delivery utilizing interactive features where appropriate. Some of the features contained within the courses may include:

- Streaming audio and/or video
- Live chat
- Bulletin board
- Personal course specific e-mail accounts
- Printable course contents
- Interactive quizzes with instant feedback
- Long answer questions
- Ability to track your progress

There are currently 6 different courses offered.

- Farm Succession Planning - $75
- Farm Accounting Using Computers - $95
- Working The Web For Agricultural Information - $20
- MARS – Accounting Solutions for Profitable Farming - $95
- Creating and Maintaining and Agricultural Website - $40
- Professional Development Interactive Section

AIMS also offer workshops on a variety of topics as requested and produces information materials and CD-ROM's.

7.3 *Saskatchewan Indian Institute of Technologies (SIIT)*

The Saskatchewan Indian Institute of Technologies (SIIT) offers training and education programs to First Nations adults in Saskatchewan. There is a wide range of programming throughout the province, both on and off-reserve. SIIT provides technical and vocational employment programming, as well as educational services for continued career growth. It is a post-secondary institute that operates under the Regional College Act. SIIT delivers a variety of programming as follows:

- Certified Programming (2 year diploma, 1 year certificate);
- Partnering With Industry;
- Academic Preparation;
- Out-of-Province Delivery.

Entrance requirements and length varies between programs. Among many others, SIIT offers a course on Agricultural Production and Integrated Forest Worker. Students must have their Grade 10, be 17 years of age, pass an entry test and be interviewed. The program is 22 weeks long and upon successful completion students receive SIAST certification.

The program provides opportunities to develop skills and knowledge needed to work in the agriculture industry. It is delivered in modules so that those who cannot attend on a regular basis can finish the course over a period of time. Practical skills using hands-on approach is emphasized. The program includes courses in Crop Production, Soil Management, and Farm Records and Financial Plan.

7.4 *Saskatchewan Regional Colleges*

Saskatchewan Regional Colleges provide the opportunity to access post-secondary education and training in their own communities. Enrollment is available in certain

programs in Saskatchewan's two universities and SIAST. There are nine main centres located throughout Saskatchewan:

- Carlton Trail Regional College – Humbolt
- Cumberland Regional College – Nipawin
- Cypress Hills Regional College – Swift Current
- Lakeland College – Lloydminster
- North West Regional College – North Battleford
- Northlands College – Air Ronge
- Parkland Regional College – Melville
- Prairie West Regional College – Biggar
- Southeast Regional College – Weyburn

The Regional Colleges throughout Saskatchewan offer a number of programs and resources including:

- Adult Basic Education
- University Programs
- Literacy Programs
- Technical Programs
- Career/Learner Services
- Community Education Programs
- Job Start/ Future Skills
- Community & Personal Training
- Student Services
- Computer Training

Different colleges offer programs varying in length. Everything from short workshops to diploma training is available. The format and cost of the programs are also varied according to demand. The goal of the Saskatchewan Regional Colleges is to provide flexible, affordable, and accessible programs.

7.5 *Saskatchewan Institute of Applied Science and Technologies (SIAST)*

SIAST is an institution for adult career education, responsive and committed to quality and freedom within a healthy organizational structure. Programs, services and employees embody academic freedom, accountability, collegiality, diversity, integrity, mutual respect, openness, professional responsibility, program service and excellence, and responsiveness. SIAST offers 86 full time certificate, 49 diploma, 13 advanced certificate, 39 applied certificate and 27 apprenticeship programs within the following categories:

- Agriculture
- Applied/Visual Arts
- Equipment Operator
- Health Sciences

- Business
- Community Services
- Construction
- Electronic/Engineering Technology
- Environmental
- Hospitality
- Information Systems
- Laboratory
- Manufacturing
- Mechanical Servicing

A broad range of part-time credit programs are offered on campus and at various locations throughout Saskatchewan. SIAST also offers

- non-credit programs that meet the needs of business and industry, and individuals who want to update their employability related knowledge and skills.
- basic skill development programs in Basic Education, Basic Literacy, English as a Second Language, General Educational Development (GED), High School Completion and Life Skills.
- alternative delivery methods for many programs. These include distance learning and development (virtual), and programming through the Saskatchewan Regional Colleges and Saskatchewan Communications Network (SCN). More information can be obtained from the SIAST website: http://www.siast.sk.ca

Specifically, the following relates directly to Agroforestry. SIAST delivers the Integrated Resource Manager, Forest Ecosystems Technology and GIS/GPS for Resource Management Programs from Woodland Campus in Prince Albert.

A sample of some of the forestry-related courses from these programs that could be offered include:

- Agroforestry Introduction
- Forest Maintenance
- Forest Health
- Fire Prevention Techniques
- Scaling Accreditation
- Forest Hydrology
- Forest Harvest Practices
- Forest Planning
- Wood Products and Utilization
- Forest Stand Tending
- Forest and Wildlife
- Forests and Ecotourism, among others.

As well, the Vocational Forestry program and a number of extension courses based out of Woodland Campus deliver courses related to the forestry industry that include thinning, planting, chainsaw use and safety, conventional and mechanical harvesting.

SIAST campuses are located in:

- Saskatoon - Kelsey Campus
- Moose Jaw - Palliser Campus
- Regina - Wascana Campus
- Prince Albert - Woodland Campus

SIAST also offers programs in Meadow Lake at the Meadow Lake Centre.

7.6 *Nova Scotia Department of Natural Resources Woodlot Management Home Study Series*

The Nova Scotia Department of Natural Resources has developed the program as an educational approach designed to help the woodlot owners understand integrated resource management. Because forest management is such a broad topic, this series is divided into several study modules. These 10 study-at-home modules cover many aspects of forest resource management, including:

- Introduction/Getting More from Your Woodlot
- Principles of Forest Stewardship
- Introduction to Silviculture
- Harvesting Systems
- Stand Spacing
- Wildlife and Forestry
- Stand Establishment
- Chain Saw Use and Safety
- Woodlot Ecology
- Wood Utilization and Technology
- Woodlot Recreation
- Managing Woodlot Finances

At the end of each chapter is a self-answer quiz. After a module is studied at home, field days will be arranged to review the material and show how it applies to woodlot situations.

The modules can be ordered from the Nova Scotia Natural Resources Department. Four of the modules are currently available online at http://www.gov.ns.ca/natr/regional/extension/homestudy.html. Shortly all the modules will be available online.

7.7 *Vancouver Island Master Woodland Manager Forest Renewal BC Small Woodlands Program*

This curriculum was produced for woodland owners on Vancouver Island in 1999. The Master Woodland Manager Program is based on the program from Oregon State University. It takes approximately 60 hours to complete the 8 modules. By the end of the course the Master Woodland Manager trainees should have skills to:

- Host tours, demonstrations, and workshops; conduct one-on-one visits on their woodlands; speak to community groups about forestry; and other mechanisms.
- Assist landowners to identify their own goals and objectives for managing their forestland.
- Help landowners identify various management opportunities on their properties.
- Provide reference materials and referrals to landowners for forest management and problem identification.
- Assist landowners to make initial diagnoses for tree diseases and insect problems on their properties, and teach landowners how to use disease and insect damage identification keys.

- Demonstrate proper seedling handling and planting, proper site placement, and proper stock type to land owners.
- Describe potential non-timber forest product options to landowners.
- Explain techniques for protecting sensitive sites during logging.

Copies of the Woodland Workbook are available from Oregon State University Extension Service for US$41.50.

8.0 Delivery Methodology

According to the survey, Saskatchewan woodlot owners prefer a combination of classroom study and field exercises. This ensures that there is hands-on learning involved. There are however, a number of ways in which woodlot and agroforestry management training courses can be delivered. Examples of delivery methods include home study, on-line, classroom, field, workshops, satellite broadcast, or a combination of different methods. In Saskatchewan, the Saskatchewan Communications Network (SCN) is used by various training providers. The University of Saskatchewan, University of Regina, and the Saskatchewan Institute of Applied Science and Technology (SIAST) offer a variety of Televised Distance Education courses every year. The SCN Training Network provides Saskatchewan people with opportunities for formal education and training in over 150 communities. The province's universities and SIAST work closely with SCN and the Regional Colleges to deliver credit programs to more than 180 Saskatchewan classrooms. SCN's Training Network gives people access to credit programming in or near their own communities.

Classes are delivered through the SCN closed circuit network and/or through independent home study videos and print packages. These classes will have study guides/manuals and textbooks as part of their course packages. Lectures will be given on the SCN network and/or on pre-taped videos provided directly to the student. Students are given the opportunity to talk to their instructors and have their questions answered during SCN broadcasts and/or during designated tutorial phone sessions. Midterm and final exams will be written in all classes and these will be held at the SCN sites. SCN could be adapted to the needs of the Saskatchewan agroforestry industry (see Appendix E).

Based on the fact that the survey respondents wanted inexpensive, informal training, this research has found that the success of such programs in Canada, including the Nova Scotia Woodlot Management Home Study Series and the Vancouver Island Master Woodlot Program have similar potential here. Both offer inexpensive training in the components desired by the survey respondents (basic and intensive management, business planning, and environmental issues), and both offer the flexibility of time and prioritizing -- important issues to the survey respondents.

9.0 Course Costs/Funding

The cost of courses varied depending on delivery method, location, credit/non-credit, and funding sources. The Nova Scotia Woodlot Management Home Study Series is a government-funded project and is available free of charge. The Master Christmas Tree Grower course is available from the North Carolina State University Extension Centre for $20 US. This program is based in a classroom for three hours per week, over a period of six weeks. Since the survey indicated that cost of a program may be a constraint on their ability to participate, it is desired that Saskatchewan develop a program free of charge, or at a minimum cost. However, the focus group did indicate that, depending on course content, length, credit or non-credit, and location, that they would be willing to pay up to $350.00.

10.0 Industry Validation

A focus group meeting with producers/landowners was held following the telephone survey to validate the findings. The focus group participants were chosen from the lists of telephone survey participants. Focus group participants were advised that prior to conducting the focus group, Trimension Group conducted 90 telephone interviews to gather information from Saskatchewan woodlot managers, as well as with seven businesses who purchase wood fiber from private woodlot owners (see Appendix E for Moderator's Guide).

10.1 Current Woodlot Management Practices in Saskatchewan

Environmental reasons were offered by the majority of survey respondents, followed by economic reasons, as to why they are currently undertaking woodlot management. For those who are not currently doing so, several reasons were cited, including: too expensive; too time-consuming; lack of market incentives; and, a lack of knowledge about basic management practices.

The focus group discussed and supported these responses, and suggested other possible reasons, including a general lack of knowledge about tree-planting, stand tending, intensive management practices, marketing, and basic management practices. The group also suggested that another problem for private landowners area was the disinterest from companies to buy their trees.

The focus group participants expressed their own personal choices for either practicing or not practicing management on their woodlots. Those who do so undertake their management practices for reasons similar to those offered by the survey respondents, including: environmental and wildlife sustainability; firewood; aesthetics; and, for

recreation. Those who choose not to manage their woodlots indicated that a lack of knowledge or incentives had influenced that choice.

Focus group participants agreed with the survey results in regards to what type of training was needed. They argue that the four categories outlined in the survey are all very important, with basic business development being the key area to focus on. Other important areas of training were identified, including: the knowledge of carbon credits: the type of trees that can be planted; and, how long it would take to benefit from them.

The focus group also suggested that it was important for landowners to understand the management of not only the trees themselves, but also about growing herbs and berries, wildcrafting, and basic knowledge of wildlife and their habitats.

Providing the Training

91% of respondents indicated that they would take advantage of training if it were available in the province. The majority identified informal (non-credit) as the preferred type of training, with the preferred format being a combination of self-study/classroom and field exercises.

There is a strong feeling that combining self-study/classroom and field exercises is important to gain both theory and hands on knowledge of woodlot and agroforestry management. One participant said that the only reason that he would take the course would be to teach others. This was an important issue. Realizing that not all landowners may be interested in woodlot and agroforestry management, the focus group indicated that it would be beneficial to train some farmers in the area who can then teach others. The participants also suggested that having one-on-one visits to their woodlot would help them determine what their needs are, and what options may be available to them in terms of education and training requirements. The consultant could suggest what courses would be appropriate to the landowners' respective needs.

Focus group participants were told about the Nova Scotia Department of Natural Resources Woodlot Management Home Study Series as an example of a successful woodlot management course in Canada. The program is free of charge and is available throughout Canada. Participants are sent a workbook for each module which they work through until it is completed, and then they receive the next module.

Focus group participants felt that the Nova Scotia program would be applicable to their needs, however the program would have to be modified for the culture, climate, tree species and diseases in Saskatchewan. The modules were favorable for their the convenience of working at one's own pace through them. The program was also appealing because there is no time limit for completing the course.

Some participants feel that the people taking a course should pay a nominal fee. A shared cost system between the government and the individual taking the course was suggested. Other focus group participants indicated that they would not pay for woodlot and agroforestry management training in Saskatchewan if they can benefit from Nova Scotia's program free of charge on the Internet.

While the survey respondents did not indicate a preference for satellite or internet based training, these types of courses may have several advantages for the wooded land managers. For rural producers, there is the potential for increased accessibility and higher enrolment numbers what would be in and instructor-led course. As well, supplementing these courses with field exercises and instructor consultation on demand is just as effective. By keeping the development and delivery costs down, tuition will be lower and seem more reasonable to participants.

Several reasons were given by respondents as to why training may be difficult for some to participate in, including: too expensive, too time-consuming and a reluctance to travel. The majority of focus group participants therefore felt that distance education using the Internet or satellite would be appropriate for woodlot managers. The Internet-based program allows the participant to have the convenience of taking the class in their own home. Although the course lacks any personal interaction, the flexibility of the time and speed of learning are attractive.

The focus group discussed using the Saskatchewan Communications Network as a form of interaction through satellite. Using satellite broadcasting at the Regional Colleges allows students to come in and interact with other students and the televised speaker.

The group discussed the course length and suggested that the course should be offered over a long period of time to meet individual needs.

It is important to include a field exercise in the woodlot and agroforestry management course where the students get together in a woodlot and go through some of the practical aspects with the instructor. One participant said that they would prefer to have a personalized visit by a specialist to their individual woodlot to discuss their options.

10.2 Credit vs. Non-credit

The survey results show a preference for non-credit courses, however, the potential may exist in the future for these courses to become credit.

Focus group participants felt that in terms of credit or non-credit courses, that they should have the option of either. They would like the same course content to be available in both formats. For most, credit is associated with recognized training, as it

provides the participant with the credentials often required for employment, or for teaching others. However, the group was split as to whether they would take advantage of a credit program.

Some participants recognize the fact that for many farmers, obtaining credit is not as important as it would be for someone younger or "just out of school." If the course if for personal interest only, obtaining credit is not seen as very important. However, others believed that if the course were for credit that more people would take advantage of it. These same participants also believed that if the course were for credit that people would be willing to pay more than for a non-credit course.

In terms of who should be responsible for accrediting the programs, the focus group participants had several different suggestions. These included the Federal Government, the Government of Saskatchewan, the University of Saskatchewan, SIAST and industry. However, all participants stressed the fact that they would like the accreditation to be recognized by all these private and public sectors. They would like to see the program be accredited by an institution and recognized by industry.

Participants felt that although this training is important, programs (both credit and non-credit) should be available and accessible to woodlot managers in all areas of Saskatchewan. The focus group participants agreed with the survey respondents that barriers to training may include the cost of the course, the time required and the travel involved. The participants also identified the fact that many woodlot managers have some other type of employment, including farming, therefore finding the time for training may be difficult. To eliminate some of these difficulties, the focus group participants suggested that the course involve some on-site visits from the training providers, while others suggested classroom-based training in smaller centres. There were some suggestions, however, for home-based study, involving modules that could be done at a customized pace.

10.3 Paying for Training

Non-credit woodlot management courses across North America range in price from no-charge to $350.00 for independent home study courses, while credit programs, involving home-study, classroom and workshop programs range form $35.00 to $1500.00. Although there are currently no woodlot management programs in Saskatchewan, there are several models that can be adapted. For example, the Certificate in Agriculture Program (CAP) at the University of Saskatchewan offers seven 3 credit, independent study courses ($324.00 each) towards certification. Each course requires approximately 6-8 hours/week to read course materials and prepare assignments. Course materials are sent out, and some courses are provided by the Saskatchewan Communications Network (SCN). At SIAST, several courses are offered once a week in the evening over a three month period. Courses for credit range in price from $100.00 (+books) to

$295.00, while non-credit courses range in price from $75.00 to $185.00. SIAST also offers 6 hour, non-credit workshops that provide hands-on, skill training for less than $100.00

In terms of course modules and the length of training, the focus group participants discussed that each module or course would not be the same in length and time, therefore a diversity in courses is acceptable. However, the need for a preliminary or introductory course is important because it would create interest for other areas in woodlot management. They also discussed that the courses should not be too complicated.

The focus group had little understanding of how tuition costs are developed. However, they appreciated the idea of examining the cost of course development and time and then dividing this cost by the number of participants taking the course, in order to cover the course development. Another idea was to get the government involved to cut costs in developing a program for those interested in taking the training as a residency into a program.

A reasonable tuition fee for the focus group participants fell in a range of $100.00 to $350.00. They also indicated anything over that price range would discourage people from taking a course. They agreed that this price range would make the course reasonable for everyone interested.

10.4 Forest Industry Business Survey

The businesses surveyed agreed that more information on training/management practices would benefit both private landowners and the businesses involved in this sector to develop a prosperous industry, as they are currently not being actively approached by private woodlot owners to sell wood to them.

When asked if more education and training would help landowners' business relationships with purchasers, the focus group participants indicated that it is important for each sector to know and understand what the other is doing. In order to make their timber resources viable to purchasers, landowners need to understand the needs of the market, and they need to focus on the specification of the product they are selling.

10.5 General Questions

The focus group participants feel that a combination of the Saskatchewan Government and educational institutions such as the University of Saskatchewan and SIAST need to be involved in addressing the training needs of Saskatchewan woodlot owners.

One of the participants stated they he "would also like to see the government get directly involved in the carbon credits...first at the Canadian level and then worldwide... This would increase the chance that woodlot and agroforestry managers receive enough money to make planting trees viable."

11.0 Key Findings

The majority of the respondents were unsure and in some cases unaware of the type of training that would be needed. This was largely due to the fact they are unaware of the potential economic and aesthetic opportunities which exist from their native stands of trees on their wooded lands. When explained, many indicated there would be a need for basic wooded land management training

The telephone survey respondents and focus group participants provided the same overall conclusion regarding woodlot and agroforestry management training. They would like on-site visits, in which they can consult with someone about how to integrate their existing farm operation from a business management and economic view, and that is very landowner specific.

The focus at the beginning of any course development should be the on-site technology transfer and landowner specific activity over any formal credit or non-credit training.

Once the on-site consultation has been made, landowners will have an idea on how they should go about their enterprise. It is anticipated that they will then question how it can be done, and what training is available.

The training should be very basic and introductory and gradually lead up to more formal credit-based training. The cost should be at a minimum, but should also gradually move up the scale in price (corresponding to the credit level).

12.0 Recommendations

Based on the information collected in both the telephone interviews and the focus group, the review of existing courses and materials, and meetings with the Woodlot/Agroforestry Management Course Development Committee, several recommendations can be made:

Institutions:

- There is a need for educational and training institutions like SIAST and the regional colleges and the universities to begin developing basic woodlot

management introductory courses while simultaneously working towards developing similar content-based credit programs.

- Readily pull together introductory courses from existing programs, such as those in Nova Scotia and British Columbia, focusing first on the native stands of trees and then into the other facets of woodlot and agroforestry management areas, such as plantations.
- Explore existing course delivery methods (i.e. SCN, CAP, Woodlot Management Guide) for their potential to be used as a basis for introductory woodlot and agroforestry management courses
- In-depth work is required to match existing courses available with the needs of the woodlot and agroforestry industry to determine modification (conduct a detailed task analysis)

Committee:

- There is a need to develop a communications strategy, with distribution of the full report to key stakeholders, focus group participants and First Nations land managers. The Executive Overview should be made available to all parties interested, with the full report being available upon request.
- Develop an inexpensive (no more than $350/course), non-credit introductory series of courses accessible in various locations throughout the province.
- The Committee must prioritize what course material is important to include in these introductory courses, while considering course content for subsequent and/or credit courses.
- There is a need to begin to develop support services, including financial support, educational materials, and resource support.
- There is a need to market other options for program delivery to the woodlot and agroforestry industry.
- There is a need for one-on-one, extension services that provide on-site consultation between the producer and a woodlot management consultant to provide guidance and information about the introductory courses.
- Enhance partnerships with First Nations to address awareness and needs, as there is a need to explore opportunities and develop strategies that will encourage First Nations to take advantage of wooded land management practices.

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Appendix A: Detailed Description of Potential Model Woodlot and Agroforestry Management Courses for Saskatchewan

COURSE	OVERVIEW
Woodlot Management Home Study Series	Intended to help woodlot owners understand the concepts of good forest management as they apply to woodlots. It is divided into ten modules that can be completed in the home at own pace. Topics are: Intro - Getting more from your woodlot, (1) Principles of forest stewardship, (2) Introduction to Silviculture, (3) Harvesting systems, (4) Stand spacing, (5) Wildlife and forestry, (6) Chain saw use and safety, (7) Woodlot Ecology, (8) Wood utilization and technology, (9) Woodlot Recreation, and (10) Managing Woodlot Finances. After a module is completed field days are arranged to review material and show how it applies to woodlot situations.
Vancouver Island Master Woodland Manager	The Small Woodlands Program is a Forest Renewal BC initiative to increase wood supply, create forest jobs, and stimulate traditional sources of rural income. A fundamental goal of the program is to encourage sustainable forest practices on private land by helping landowners acquire the necessary skills, knowledge, and financial resources to do this. The program is home study and focuses on non-industrial private forest land, First Nations' reserves, and agricultural leases. The curriculum was based on the Master Woodland Manager program at Oregon State University.
Agroforestry, Permaculture & Planning	Through lecture, discussion, observation and hands-on experiential learning, students will develop the practical skills and knowledge to design and implement sustainable systems that are in harmony with the natural world. Course topics include: Permaculture principles, Bioregional planning & mapping, Site analysis, Tree crops, Medicinal herbs, Organic Agriculture, Agroforestry systems, Greenhouses, Erosion Control, Soil microbiology, Sustainable Forestry, Ecosystem restoration, Livestock and wildlife, Appropriate energy, Formal & Informal Economies, Straw-bale construction, etc.
Permanent Agriculture Resources	Workshops directed to farmers, ranchers, gardeners, and extension agents on how to choose appropriate species and techniques to support their existing crops, reduce off-farm inputs, and increase the diversity and economic resiliency of their projects. Workshops include: Working Trees: Enriching Your Farm with Useful Trees, Nitrogen-Fixing Trees: Practical Uses or Farm and Garden, Using Tree: A Permaculture Workshop for Farmers, Ranchers, Homesteaders and Gardeners, Shelter: Protecting Your Land from Wind and Erosion, Transitions to Sustainable Farming Using Trees, etc.
Master Christmas Tree Grower Course	Classroom course for 6 wk. (3 hrs/wk) for beginning and experienced growers. All phases of Christmas tree production will be covered beginning with looking at how to select and establish a plantation site. Next, the fertility needs of a Christmas tree and how to determine and identify these needs will be covered. Other areas covered include: Integrated Pest Management practices, pest identification, scouting methods and correst pesticide use, weed identification, management of groundcovers and best management practices to control sediment are taught. Business management and marketing complete the course.
Master Tree Farmer 2001	A Satellite broadcast short-course designed for landowners and persons considering land ownership. The goal is to teach how to practice sustainable forestry and manage land to meet objectives. It provides an introduction to stewardship consideration, best management practices, and services and assistance available for managing forest land.
Woodland Options	A web-based course directed at forest landowners and lasting approximately 8 weeks. The course was implemented in Spring 2001 and will allow the landowners the flexibility of receiving natural resource management information, skill, and techniques in their own home. Participants will view video and slide shows with audio and will complete basic but meaningful activities designed to reinforce concepts learned in the course.

Appendix B: Review of Existing Courses

❖ CREDIT COURSES

SASKATCHEWAN: Credit

Program name: Integrated Resource Management
Completion: Diploma
Overview: You will receive training in fish, wildlife, forestry and parks management applying Global Positioning Systems (GPS) and Geographical Information Systems (GIS) to resource management situations mapping, compassing and remote sensing air-photo use and interpretation applying statistics to resource management problems research design, analysis and technical reporting implementing quality control surviving in the wilderness operating and maintaining vehicles, boats and all terrain vehicles. The program provides you with the opportunity to earn a SIAST diploma in Integrated Resource Management and potentially, a Bachelor of Science degree in Environmental Biology from the University of Regina. The joint degree/diploma program combines this program with five semesters of university study in Biology and Environmental Studies.
Location: SIAST locations (Saskatoon, Regina, Prince Albert, Moose Jaw)
Provider: SIAST
Contact Name: Keith Dodge at SIAST (telephone: (306) 953-7076) or Dr. Mark Brigham at the University of Regina (telephone: (306) 585-4255).

Program name: Forest Ecosystem Technology
Completion: Diploma
Directed to: Students wanting to be employed in a variety of technical roles with industry, government or consulting.
Overview: It provides the knowledge, skills and extensive field training needed to ensure success in meeting the challenges of ecosystem based forest management and protection in Saskatchewan. You will receive a broad ecological foundation. You will also develop communication, teamwork, technology and field skills. Comprehensive and hands on forestry skills development will be emphasized. The first year includes a common core of courses with the Integrated Resource Management Program.
Location: Offered throughout the province
Provider: SIAST
Contact Name: SIAST Woodland Campus
(306) 953-7000
1-800-667-9664

Program name: Geographic Information Science for Resource Management
Completion: Certificate
Directed to: Students wanting to be employed as GIS technicians in natural resource industries, the public sector and First Nation organizations. Information technologies are applied in forestry, mining, fisheries and wildlife.
Overview: Geographic Information Systems (GIS) use modern technology to automate, integrate, analyze and communicate spatially-based information. The program provides a working knowledge and competency through a hands on approach to GIS and related technologies
Location: Offered throughout the province.
Provider: SIAST
Contact Name: SIAST Woodland Campus
(306) 953-7000
1-800-667-9664

Program name: Vocational Forestry
Completion: Statement of Achievement
Directed to: Students wanting to be employed in the forest harvesting industry.
Overview: Program places strong emphasis on practical training. Trains students for employment in the forest harvesting industry including planting, thinning, conventional and mechanical harvesting, and processing a variety of forest value added industries.
Location: Offered throughout the province on a contractual basis.
Provider: SIAST Woodland Campus
Contact Name: SIAST Woodland Campus
(306) 953-7000
1-800-667-9664

Program name: Forestry Technician
Program type: Classroom/field
Completion: Certificate
Entrance requirements: Grade 12, minimum 65% average in English Language Arts A30 and B30 (combined), and minimum 65% average in Math A30 and B30 (combined).
Directed to: Students wanting individual or team support roles in the forestry industry.
Overview: Equips the student for a variety of work environments in the resource management field with an emphasis and appreciation for a wide range of forest values and practices.
Location: Prince Albert, Saskatchewan
Provider: SIAST Woodland Campus
Contact Name: SIAST Woodland Campus
(306) 953-7000
1-800-667-9664

Program name: Prairie Horticulture Certificate Program
Program type: Home study
Completion: Certificate
Length: 36 credit weights (360 hours)
Entrance requirements: Regular Admission – Grade 12; can also register for special or probationary admission
Directed to: Designed specifically for use in the Prairie Provinces.
Overview: Four specialization of courses include: Fruit and Vegetable Production; Greenhouse Crop Production; Landscaping and Arboriculture; and Nursery Crop Production. Includes an Arboriculture class that covers principles and "how tos" on installation, care, and maintenance of trees and shrubs.
Location: Saskatoon, Saskatchewan
Provider: University of Saskatchewan
Contact Name: Extension Credit Studies
(306) 966-5563
www.extension.usask.ca/go/phc
Counseling Available: The course instructor is available by telephone at pre-scheduled times to answer questions or receive comments about the course.

Program Name: Integrated Forestry Worker Program
Program Type: Classroom/field
Completion: Certificate
Entrance Requirements: Entrance requirements include the completion of grade 10, a valid driver's license, good physical condition and willingness to work outdoors and in the bush.
Overview: This course will train individuals in a variety of front line forest operations, including: harvesting; hauling; road construction; forest planning and development; silviculture; environmental impact assessment; and forest protection and manufacturing. The cost of the program, including books and supplies is $3250.00.
Provider: Saskatchewan Indian Institute of Technologies, Saskatoon
Contact: phone: (306) 244-4444, Toll free in Saskatchewan: 1-800-667-9704
fax (306) 244-1391 mail: #100 - 103A Packham Avenue Saskatoon, Saskatchewan S7N 4K4

CANADA: Credit

Program name: Agroforestry, Permaculture, & Planning
Completion: Certificate
Length: 2 weeks
Cost: $750 (includes instruction, meals, curriculum materials, campsite and use of facilities)

Overview: Through lecture, discussion, observation and hands-on experiential learning, students will develop the practical skills and knowledge to design and implement sustainable systems that are in harmony with the natural world. Permaculture course topics includes agroforestry systems.
Location: Kingston, Nova Scotia
Provider: Shades of Harmony Farm
Contact Name: Institute for Bioregional Studies
449 University AVE., Suite 126
Charlottetown, Prince Edward Island C1A8K3
902-892-9578

Program name: Woody Plants Their Identification and Use
Program type: Video-based course
Cost: $300
Overview: A video-based course made up of five videos and a supplementary manual. Covers woody plant identification and planting design. Plant species pertain to eastern North America.
Location: Guelph, Ontario
Provider: University of Guelph
Contact Name: 519-767-5050
counsel@access.uoguelph.ca
http://www.uoguelph.ca/istudy/hortcourse.htm#8-Woody Plants

Program name: Conserving Woodlands
Program type: Independent studies
Length: 350 pages; no completion deadline
Cost: $300
Directed to: Rural landowners
Overview: Woodlands provide a rich wildlife habitat, a wealth of recreation opportunities, and significant financial return when managed well. This course prescribes the steps in evaluating a woodland, considering management options - from preserving rare species to timber harvest - and developing a conservation plan. It significantly emphasizes increasing rural landowners' understanding of woodland ecosystems.
Location: Guelph, Ontario
Provider: University of Guelph
Contact Name: 519-767-5050
counsel@access.uoguelph.ca
http://www.uoguelph.ca/istudy/hortcourse.htm#8-Woody Plants

Program name: Large Tree Care
Program type: Independent Studies
Length: 160 pages; no completion deadline
Cost: $300
Overview: Tree maintenance professionals are often responsible for preserving individual trees in the urban forest. A detailed examination of the practices of large tree care - climbing: safety, clothing, ropes, descending; cutting: pruning, felling, bucking; care: wounds, bracing, cavity work, transplanting, pests and diseases, disposal.
Location: Guelph, Ontario
Provider: University of Guelph
Contact Name: 519-767-5050
counsel@access.uoguelph.ca
http://www.uoguelph.ca/istudy/hortcourse.htm#8-Woody Plants

Program name: Tree Care Equipment
Program type: Independent studies
Length: 150 pages; no completion deadline
Cost: $300
Overview: A guide through the array of specialized tools for tree maintenance. Helps you choose, use, and maintain these items wisely. The manual is divided into three parts: heavy equipment, personal equipment and general equipment, including a detailed section on knots.
Location: Guelph, Ontario
Provider: University of Guelph
Contact Name: 519-767-5050
counsel@access.uoguelph.ca
http://www.uoguelph.ca/istudy/hortcourse.htm#8-Woody Plants

Program name: Tree Ecology in the Human Environment
Program type: Independent studies
Length: 150 pages; no completion deadline
Cost: $300
Directed to: Those seeking current information on selecting and maintaining trees in the urban environment.
Overview: Provides information on selecting appropriate species; avoiding or managing diseases, pests and environmental hazards; transplanting; and pruning, to assist tree care practitioners and home gardeners alike.
Location: Guelph, Ontario
Provider: University of Guelph
Contact: 519-767-5050 counsel@access.uoguelph.ca
http://www.uoguelph.ca/istudy/hortcourse.htm#8-Woody Plants

Program name: University of Guelph (Independent Studies Extension Program)
Program type: Horticulture/Agriculture
Completion: Certificate/Diploma
Cost: $35.00-$300.00
Overview: Some courses include: Principles/Practices of Soil Sciences, Livestock production systems, weed control, soil conservation, energy on the farm, forages, Field Machinery, Dairy Goat Production, Urban Tree development, Horticulture courses related to landscaping.
Location: Independent Studies
Provider: University of Guelph, Ontario
Contact Name: Phone: (519) 824-4120
counsel@access.uoguelph.ca

Program name: Forest Engineering Technology
Program type: Part-time/distance education
Completion: Associate Certificate, Certificate of Technology, or Intermediate Certificate
Length: Variable
Entrance requirements: Grade 12 or equivalent
Overview: The program is designed to provide environmentally sound forest engineering technology training to both private and public sector employees involved in the planning, design, construction, maintenance, and deactivation of forest roads, and the planning of forest harvesting operations.
Location: Burnaby, BC
Provider: British Columbia Institute of Technology
Contact Name: BCIT
Engineering Technology Distance
Education
3700 Willingdon Avenue
Burnaby, BC V5G 3H2
Phone: (604) 451-6984 or Toll Free 1-800-663-3606
Fax: (604) 436-6113
Counseling Available: Learners are supported in their studies by access to tutors via e-mail, fax and a toll free phone number. Wherever possible assignments are field based making the courses applicable and practical for learners.

Program name: Introduction to Ecoforestry
Program type: Classroom
Completion: Certification of forests/forest products
Length: 18 hours (4 sessions)
Cost: $119

Directed to: Woodlot owners/managers, foresters, forest technologists/technicians, private forest land owners, forestry students
Overview: Introduces participants to basic principle/practices of ecologically based forest management. Topics covered include silviculture, harvesting, roads, machinery, yields, and inventories.
Location: Nanaimo Campus; also offer customized in-house sessions
Provider: Malaspina University College
Contact Name: Malaspina University College
900 5th Street
Nanaimo, BC V9R5R5
Phone: 250-755-8755
Fax: 250-741-2683
Tom.Hedekar@mala.ba.ca

Program name: Forest Resource Technology
Program type: Classroom
Completion: Diploma
Length: 2 years
Entrance requirements: Academic English 12 or equivalent, Math 11 or equivalent, Biology 11 or equivalent, Post High School on the CAAT, Résumé, Letter of Application, College Application, Two Letters of Reference from school and or employer
Overview: Opportunity to acquire skills/knowledge for a technical career in forestry. Also includes OFA Level I, Transportation Endorsement, Bear Awareness, and Helicopter Safety.
Location: Chetwyn, BC
Provider: Northern Lights College
Contact Name: Northern Lights College
Chetwyn Campus
Box 1180
5132-50th Street
Phone: 250-788-2248
Fax: 250-788-9706
clorincz@nlc.bc.ca
Counseling Available: Resource Technology at Northern Lights College includes home support, reduced expenses, local industry contacts, and local employment opportunities.

Program name: Silviculture Diploma Program
Program type: Classroom
Completion: Diploma
Length: Six, two-week modules taken over a three-year period
Cost: $1500/module + GST

Entrance requirements: Applicants must be registered professional foresters with practical silviculture or forest management experience. Other applicants will be considered on a case-by-case basis.
Directed to: Registered professional foresters specializing in Silviculture, and is also of great benefit to those working in related forest management fields.
Overview: Modules are:

- Foundations of Silviculture - Forest environment, tree and plant physiology, forest ecology and silvics, forest pathology, entomology and wildlife.
- Renewing Forests - Genetics and tree improvement, cone and seed development, impact of diseases and insects on seed collection strategies, artificial regeneration, vegetation control, site preparation, adaptive management strategies.
- Tree and Stand development - Growth and yield concepts for even-aged stands, uneven-aged stand growth and yield, TIPSY training, PROGNOSIS training, stand density management diagram training, overview of MGM, forest-level hybrid models (FORTOON, FORECAST).
- Stand Management - Forest-level dynamics, even-aged stand development and manipulation, fertilization and soil nutrition, forest landscape management, economics of silviculture operations, planning silvicultural systems using ecological classification, effect on wood quality of silvicultural treatments, partial cutting, uneven-aged management, silvicultural strategies to reduce the risk and impact of diseases and insects, wildlife management and biodiversity.
- Strategic Forest-Level Analysis - Introduction to forest-level modeling; timber supply analysis using the Forest Service simulator (FSSIM); non-timber values and strategic forest-level planning; spatially explicit timber supply analysis; strategic planning for silviculture investments.
- Application of Silvicultural Knowledge - Data collection, oral and written communication skills, modeling yields and economic analysis, and a silviculture prescription project.

Location: Kamloops BC or Vancouver Island BC
Provider: Forest Management Institute of British Columbia
Contact Name: Joanne Pickford, R.P.F.
Silviculture Program Manager
Tel: (604) 224-7800
si@fmibc.org

Program name: Forest Engineering Diploma
Completion: UBC Diploma in forest engineering
Length: 6 x 2-week modules
Cost: $1500/module + GST
Entrance requirements: Applicants must be registered professional foresters, engineers or geoscientists, or professionals in training, preferably with practical forest engineering, or related, experience. Other applicants will be considered on a case-by-case basis.

Overview: The forest engineering program is designed to improve forest practices, and enhance participants' job-related knowledge, work performance and business opportunities. Modules are:

- Forest engineering fundamentals
- Forest roads
- Forest harvesting and soils
- Economics, planning, and management
- Watershed processes and enhancement
- Integrated forest engineering

Location: Vancouver BC
Provider: Forest Management Institute of British Columbia
Contact Name: Robert Bowden, Ph.D., P.Eng.
Forest Engineering Program Manager
Tel: (604) 224-3570
fe@fmibc.org

UNITED STATES: Credit

Program name: Permaculture Design Course
Completion: Certificate
Length: 2 weeks
Cost: To be determined
Overview: This intensive course, covering both the theory and practice of permaculture, will create an in-depth learning situation that will allow participants to achieve a working knowledge of permaculture design and implementation. The course will include hands-on projects, lectures, discussions, slide shows, field trips and design projects. Topics include Agroforestry and tree crops as part of course.
Location: Dexter, Oregon
Provider: Lost Valley Educational Centre
Contact Name: Lost Valley Educational Center
81868 Lost Valley Lane
Dexter, Oregon 97431
(541) 937-3351
info@lostvalley.org
www.lostvalley.org/permdes.html

Program name: Permaculture Design Certification Course
Program type: Classroom presentation, group discussion, field demonstration, and field trips
Completion: Certificate
Length: 2 or 3 weeks
Cost: The cost of this program, including housing, meals, field trips and all course materials is US $1350.00 ($900 for the 2-week course)

Overview: Teaches many aspects of permaculture including forest management and agroforestry.
Location: Pahoa, Hawaii
Provider: La'akea Permaculture Gardens
Contact Name: La'akea Permaculture Gardens
P.O. Box 1178
Pahoa, HI 96778
programs@permaculture-hawaii.com
http://www.permaculture-hawaii.com/permaculture.html

Program name: Community Forester Institute Training & Certification
Program type: Sessions and field exercises
Completion: Certificate
Length: 4-day intensive or 10-day comprehensive
Cost: 4 – day = $390 per person & $350 per each additional team member
10 – day = $800 per person & $760 per each additional team member
Session packages include lodging and all meals, ground transportation for field work and tours, all course materials, and a set of the finest Swiss-made pruning tools.
Directed to: Designed for paraprofessionals and private land stewards.
Overview: Coursework and discussion include:

- Soil science
- Wood technologies overview
- Plant growth and physiology
- Tree care principles
- Specifics of food and biomass production
- Agroforestry perspectives
- Integrating agroforestry with conventional agriculture
- Timber stand improvement (TSI) & woodlot management
- Planning and design practicum
- Intro to tree nursery practices
- Shelterbelts and "alley" cropping
- Agroforestry entrepreneurship
- Introduction to principles of permaculture
- Foraging in the temperate woodlands

Location: Mancelona, MI
Provider: Community Forester Institute
Contact Name: 1021 Doerr Road
Mancelona, MI
49659
glblc@traverse.com
http://www.traverse.com/earthkeepers/training.html

OTHER: Credit

Program name: Native American Permaculture at Tesuque Pueblo
Completion: Certificate
Length: 2 weeks
Cost: Paid with grant
Directed to: Native Americans including elder, grandchildren, Pueblo officials, students, and a wide range of skilled individuals.
Overview: Intensive two-week training included theory and practice of ecological land use planning, watershed restoration, home and commercial organic gardening, alternative building design, natural waste treatment systems, soil building, forest gardening, seed collecting and preservation, animal forage systems, native plant lore, and regenerative economics. After two years of practical application of the permaculture design system, graduates will receive their diplomas from the International Permaculture Institute, Australia, which entitles them to become certified permaculture designers and instructors.
Location: Perth/Bridgetown, Western Australia
Provider: Environmental Department of Tesuque Pueblo, Traditional Native American Farmers' Association
Contact Name: Peter Austin
pustin@rosheath.com.au

Program name: Agroforestry: Trees in Support of Agriculture
Program type: Classroom
Completion: Certificate
Length: 5 weeks
Cost: 3950 (pounds)
Overview: The course confronts key issues in agroforestry including: practices and practicalities, tree-crop interactions, site modification, community issues and the agroforestry knowledge base and the philosophy of agroforestry research
Location: Oxford, UK
Provider: Wye College and Oxford Forestry Institute
Contact Name: Course Coordinator
Oxford Forestry Institute, Department of Plant Sciences
University of Oxford, South Parks Road
Oxford OX1 3RB, UK
Fax 44-1865-275146
a.rycraft@wye.ac.uk
http://www.itto.or.jp/newsletter/v7n1/31CourS1.html

Program name: Two-year Diploma Course
Completion: Diploma
Length: 2 years
Entrance requirements:

- be less than 25 years of age
- be graduates of a six-year secondary school or other institution of equivalent standing
- be physically fit and of good character
- have completed their required service in the National Guard
- pass the College entrance examinations, and
- attend successfully a selection interview.

Overview: Theory is combined with thorough practical training acquired by demonstrations, project work, and field experiments and work. The following courses are taught: Silviculture, Botany, Systematic Botany, Forest Mensuration, Forest Management, Nursery Management, Timber utilization, Entomology, Pathology, Forest Policy and Law, Ecology, Administration, Agroforestry, Nature Conservation, Statistics, Computers, Soils, Geology, Genetics, Zoology, Meteorology, Chainsaws, First Aid, Recreation
Location: Cyprus
Provider: Cyprus Forestry College
Contact Name: Cyprus Forestry College
CY-4841 Prodromos
Cyprus
Tel: 357-5-462048
Fax: 357-5-462646
Forcollege@cytanet.com.cy

Program name: Six-month Post Diploma Course
Length: 6 months
Directed to: Foresters and forest graduates
Overview: Designed to provide to Foresters and Forestry graduates further studies in specific forestry topics. They are required to carry out research work and present their results in the form of a thesis report.
Location: Cyprus
Provider: Cyprus Forestry College
Contact Name: Cyprus Forestry College
CY-4841 Prodromos, Cyprus
Tel: 357-5-462048
Fax: 357-5-462646
forcollege@cytanet.com.cy

❖ NON-CREDIT COURSES

SASKATCHEWAN: Non-Credit

Program name: Saskatchewan Forest Industries Safety Association Inc.
Length: 1 or 2 days
Directed to: Employers and workers of Saskatchewan's forest industry.
Overview: Training programs and brochures are offered on: Safety Management (2 days); Conventional Logging (1 day); and Chainsaw Safety in Sawmills (1 day). Also provide Conventional Logger Certification and Safety Program Development.
Location: Prince Albert, Saskatchewan
Provider: Saskatchewan Forest Industries Safety Association Inc.
Contact Name: (306) 764-5582
(306) 762-5583
Counseling Available: Provide other services including worksite evaluation, noise level testing, consultation and accident investigations.

Program name: Value Added and Agroforestry Resource Manual
Program type: Resource Manual
Directed to: Communities in northeastern Saskatchewan
Overview: The manual was developed to encourage growth in the forestry and agroforestry sectors. It contains 33 sections including:

- Safety
- Resources of the region
- Special forest products
- Wildcrafting
- Products of wood
- Reforestation
- Marketing
- Farm Wood Lots and Private Forest Lands
- Christmas trees

Provider: Etomami Valley Regional Economic Development Authority

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Program name: Woodlot Management Guide for the Prairie Provinces
Program type: Resource Manual
Directed to: People with limited knowledge and experience in forestry and woodlot management.

Overview: The most comprehensive guide available for woodlot owners in the Prairie Provinces. It includes four main sections on Woodlot Assessment, Multiple Land Use, Products/markets, and Woodlot Management. The Farm Woodlot Association of Saskatchewan also offers extension services.
Location: Spiritwood, Saskatchewan
Provider: Farm Woodlot Association of Saskatchewan
Contact Name: Nancy Lyle
216 Main St., PO Box 309
Spiritwood SK
S0J2M0
(306) 883-2204
fwas@sk.sympatico.ca
Counseling Available: The Farm Woodlot Association of Saskatchewan's website indicates that they also offer:

- Forest resource and technical information.
- A woodlot walk-thru service, on site consultation with a woodlot extension person.
- Fee for service management planning assistance and help implementing your operating plan.
- A quarterly newsletter "In Your Woodlot" for members and subscribers.
- Access to market information.

Program name: The Seventh Biennial Conference on Agroforestry in North America and The Annual Conference of the Plains and Prairie Forestry Association.
Program type: Conference
Length: 3 days
Cost: Early Registration $190; Regular Registration $220
Overview: Theme is "Temperate Agroforestry: Adaptive and Mitigative Roles in a Changing Physical and Socioeconomic Climate". Specialists will speak on: Environmental Mitigation, Carbon and Marketing Carbon Credits, Poplar as a Short Rotation Woody Crop, and Shelterbelts.
Location: Regina, Saskatchewan
Provider: Agriculture & Agri-Food Canada, Prairie Farm Rehabilitation Administration, Saskatchewan Agriculture and food, Saskatchewan Environment and resource Management and Natural Resources Canada, and Canadian Forest Service.
Contact: PFRA Shelterbelt Centre
P.O. Box 940
Indian Head, Saskatchewan
(306) 695-5130
www.agr.ca/pfra/aftappfa.htm

Program name: PFRA Shelterbelt Centre
Directed to: The PFRA website lists eligible candidates as:

- Bonafide farmers and producers of primary agricultural products.
- Owners of rural smallholdings (.4 - 16 ha, 1 - 39 acres).
- Federal and provincial departments for planting on public, private or Crown lands for conservation, reclamation or research purposes.
- Villages, towns and cities are eligible to receive caragana, Manitoba maple, green ash, villosa lilac and Siberian elm.
- Charitable organizations, such as 4-H, Scouts, etc., for plantings on land serving the public without charge.
- Indian band councils and individuals for plantings on reserves.

Overview: The PFRA Shelterbelt Centre is a federal tree nursery that produces hardy trees and shrubs for prairie farmers and other eligible clients. The Centre also conducts applied research on tree related issues including tree improvement, planting technology, weed control, pest control and agroforestry.
Location: Indian Head, Saskatchewan
Provider: Prairie Farm Rehabilitation Administration – Agriculture & Agri-Food Canada.
Contact: PFRA Shelterbelt Centre
P.O. Box 940
Indian Head, Saskatchewan
(306) 695-5130
http://www.agr.ca/pfra/shbgene.htm
Counseling Available: On request the PFRA will provide:

- Planning assistance for farmers.
- Planning assistance for federal, provincial and municipal agencies.
- Public meetings and displays.

Program name: Saskatchewan Forest Industries Safety Association Inc.
Length: 1 or 2 days
Directed to: Employers and workers of Saskatchewan's forest industry.
Overview: Training programs and brochures are offered on: Safety Management (2 days); Conventional Logging (1 day); and Chainsaw Safety in Sawmills (1 day). Also provide Conventional Logger Certification and Safety Program Development.
Location: Prince Albert, Saskatchewan
Provider: Saskatchewan Forest Industries Safety Association Inc.
Contact Name: (306) 764-5582
(306) 762-5583
Counseling Available: Provide other services including worksite evaluation, noise level testing, consultation and accident investigations.

CANADA: Non-Credit

Program name: Woodlot Management Home Study Series
Program type: Modules by mail or on-line
Completion: Non-credit
Length: Own pace
Cost: Free registration
Directed to: Developed for those who want to learn more about managing their woodlands.
Overview: Topics are:

- Introduction - Getting More from Your Woodlot
- Principles of Forest Stewardship
- Introduction to Silviculture
- Harvesting Systems
- Stand Spacing
- Wildlife and Forestry
- Stand Establishment
- Chain Saw Use and Safety
- Woodlot Ecology
- Wood Utilization and Technology
- Woodlot Recreation
- Managing Woodlot Finances

Location: Nova Scotia
Provider: Nova Scotia Department of Natural Resources
Contact Name: dnrweb@gov.ns.ca
http://www.gov.ns.ca/natr/extension/woodlot

Program name: Cutter Course
Length: 24 hours
Cost: $95.52 + required tools and safety equipment.
Directed to: Designed for people who have minimal chainsaw experience.
Overview: Six hours are spent in the classroom reviewing standard chainsaw use and maintenance techniques. Two days are spent in the bush perfecting these methods.
Location: Frost Campus, Lindsay, Ontario
Provider: Sir Sandford Fleming College
Contact Name: 1-705-878-9310
cnrtc@flemingc.on.ca
http://fleming0.flemingc.on.ca/tds/pt-time/cutter.htm

Program name: Mixedwood and Riparian Management
Program type: Workshop
Cost: $215 + GST

Provider: Coastal Silviculture Committee
Contact Name: Tom Hedekar RPF Program Manager
Tom.Hedekar@mala.bc.ca

Program name: Private Woodland Planner
Program type: Home study (computer)
Completion: Non-credit
Cost: Free software
Entrance requirements:
Directed to: The program focuses on non-industrial private forestland, first nations reserves, and agricultural leases.
Overview: The Small Woodlands Program (SWP) is a Forest Renewal BC (FRBC) initiative to increase wood supply, create forest jobs, and stimulate traditional sources of rural income.
Location: Smithers, BC
Provider: Small Woodlands Program
Contact Name: Small Woodlands Program Office
PO Box 2179, Smithers, BC V0J 2N0
1-877-847-1830
info@swp.bc.ca

Program name: Silviculture Technical Program
Program type: Classroom
Length: 6 x 1-week modules
Cost: $750/module + GST
Entrance requirements: Applicants must be forest technicians or technologists with practical silviculture or forest management experience.
Directed to: Career forest technologists and technicians working in silviculture and is also of great benefit to those working in related forest management fields, such as timber and forest health. The program upgrades participants' knowledge in all areas of silviculture.
Overview: Modules include:

- Biological and ecological principles
- Silvicultural Tools and Techniques: Stand Establishment
- Silvicultural Tools and Techniques: Stand Tending
- Silvicultural Tools and Techniques: Stand Damage Control and Silvicultural Systems
- Integrated Resource Management
- Field applications

Location: Kamloops BC or Vancouver BC
Provider: Forest Management Institute of British Columbia
Contact Name: Joanne Pickford, R.P.F. Silviculture Program Manager
Tel: (604) 224-7800 si@fmibc.org

UNITED STATES: Non-Credit

Program name: PFC Training: Assessing Proper Functioning Condition of Riparian/Wetlands
Program type: 1-day field; 1 day field application
Length: 2 days
Cost: None
Overview: This course presents a process that enables an interdisciplinary team to assess the functional condition, capability and potential of riparian-wetland areas. It is based on the physics of streams, riparian function being the interaction of soil, water and vegetation. Riparian function is indicative of watershed health. This course presents a method to gain site specific knowledge in order to determine realistic and achievable desired future conditions.
Location: Locations and schedules are currently in development.
Provider: Bureau of Land Management and Forest Services
Contact Name: Susan Holtzman, USDA Forest Service
P.O. Box 3523, Portland Oregon 97208
Phone: 503-808-2987
Fax: 503-808-2469

Program name: Permanent Agriculture Resources
Program type: Workshops
Completion: Non-credit
Directed to: Farmers, ranchers, gardeners, and extension agents
Overview: Designed for farmers, ranchers, gardeners, and extension agents, who learned how to choose appropriate species and techniques to support their existing crops, reduce off-farm inputs, and increase the diversity and economic resiliency of their projects. Workshops include:

- Working Trees: Enriching Your Farm with Useful Trees
- Small-Scale Abundance: Species & Strategies for Sustainable Farming and Gardening
- Nitrogen Fixing Trees: Practical Uses for Farm and Garden
- Transitions to Self-Reliant Farming
- Using Trees: A Permaculture Workshop for Farmers, Ranchers, Homesteaders and Gardeners.
- Shelter: Protecting Your Land from Wind and Erosion.
- Transitions to Sustainable Farming Using Trees

Location: Holualoa, Hawaii
Provider: Permanent Agriculture Resources
Contact Name: P.O. Box 428 Holualoa, Hawaii 96725 USA Tel: 808-324-4427
Fax; 808-324-4129 training@agroforester.com
http://www.agroforester.com/par/workshops.html

Program name: Pastureland Ecology I
Length: 8 days
Cost: None
Entrance requirements: Recommended but not required that participants have attended the course "Working Effectively with Livestock Producers".
Directed to: Employees responsible for leadership in the grazing land discipline. Employees with 3-5 years of pastureland planning assistance.
Overview: This course will examine the interaction of soil, water, air, plants, animals and humans and pastureland ecosystems. Situation analysis of animal forage management practices will be discussed. Practical applications of pasture design, fencing, watering and feed rationing will be discussed.
Location: North Carolina State University, Raleigh, NC
Provider: USDA Natural Resources Conservation Service
Contact Name: Tony Lovell, USDA Natural Resources Conservation Service
National Employee Development Center
P.O. Box 6567, Fort Worth, TX 76115
tlovell@ftw.nrcs.usda.gov
http://www.ftw.nrcs.usda.gov/nedc/courcses.html

Program name: Master Christmas Tree Grower's Course
Program type: Classroom
Completion: Non-credit
Length: 6 weeks (3 hours per week)
Cost: $20
Directed to: For beginning and experienced growers.
Overview: All phases of Christmas tree production will be covered beginning with looking at how to select and establish a Christmas tree plantation site. Next, the fertility needs of a Christmas tree and how to determine and identify these needs will be covered. Two weeks will be spent on Integrated Pest Management practices. Areas such as pest identification, scouting methods and correct pesticide use will be covered. Weed identification, management of groundcovers and best management practices to control sediment are taught. Business management and marketing complete the course.
Location: NC State University Extension Centre
Provider: Mitchell County Extension Centre
Contact Name: (828) 668-4811
(828) 668-2015
http://mitchell.ces.state.nc.us/newsletters/hort/hortjan01.html

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Program name: Master Tree Farmer 2001
Program type: Satellite broadcast short-course
Completion: Non-credit
Length: 7 weeks (3 hours per week)
Cost: $50 per person; $25 per couple (one set of handout materials)
Directed to: Designed for landowners and persons considering land ownership.
Overview: Teaches how to practice sustainable forestry and manage land to meet objectives. It provides an introduction to stewardship considerations, best management practices, and services and assistance available for managing forestland.
Location: Fletcher, North Carolina
Raleigh, North Carolina
Winston-Salem, North Carolina
Provider: North Carolina State University Cooperative Extension
Contact Name: Extension Forestry
NC State University
Campus Box 8003
Raleigh, NC 27695-8003
Phone: 919-515-5638
Fax: 919-515-6883
www.ces.ncsu.edu/nreos/forest/
Counseling Available: Toll-free number to ask questions to presenter

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Program type: Workshop
Length: 2 days
Cost: US $65; includes 100 page manual, a copy of the new 402 page book North American Agroforestry: An Integrated Science and Practice, a collection of 25 slides illustrating the 5 practices, two videos on silvopasture and alley cropping, two box lunches, and observations of several landowners discussing their agroforestry experiences.
Overview: Covers alley cropping, silvopasture, forest farming, riparian forest buffers, and windbreaks.
Location: Columbia, MO
Provider: University of Missouri Center for Agroforestry
Contact Name: Dusty Walter
University of Missouri Center for Agroforestry
203 ABNR Columbia MO 65211
(573)884-7991
WalterD@missouri.edu

Program name: Agroforestry Professional Training Workshop
Program type: International Workshop
Length: 2 days
Directed to: Natural resource professional and educators
Overview: In-depth discussion of the five temperate agroforestry practices, agroforestry and wildlife and the economics of agroforestry lead to break out sessions on planning and applying agroforestry practices.
Location: Columbia, Missouri
Provider: University of Missouri
Contact Name: Center for Agroforestry
203 Anheuser-Busch Natural Resources Bldg. (ABNR)
Columbia, MO 65211
Phone: (573) 884-2874 Fax: (573) 882-1977
umca@missouri.edu

Program name: Permaculture Immersion Course
Length: 9-day intensive
Cost: $900 includes instruction, Introduction to Permaculture book, course materials and 3 meals a day
Directed to: Professionals in the fields of architecture, engineering, urban planning, landscape architecture, forestry, business management, health and more. Many ranchers, farmers, organic gardeners, homeowners, and school teachers have also attended.
Overview: This workshop introduces participants to the practical application of sustainable land design principles and will focus on water conservation and management , erosion control and prevention and strategies for drought proofing your land. Participants will learn the theory and practice of land reclamation and revegetation through design, layout, & construction. We will conduct a site analysis, build a level using on-site materials, lay out and dig a series swells and design and plant perennial forest assemblies for native eco-system reclamation, woodlots and alley cropping.
Location: Woody Creek
Provider: Sustainable Settings
Contact Name: Brook Le Van, Co-Director
Sustainable Settings
PO Box 336 Woody Creek, CO USA 81656
Phone: 970-923-1366
Fax: 970-923-1367
info@sustainablesettings.org
http://www.sustainablesettings.org/

Program name: Living Snow Fence Program
Program type: Face to face
Completion: Non-Credit
Cost: Free
Directed to: Landowners/public
Overview: Designed for landowners/public interested in reducing snowdrifting and blowing in farmsteads and on highways. Identifying Living Snowfence sites in Watonwan County and talking to landowners about the Living Snowfence Benefits in hopes to establish plantings on these sites.
Location: Watonwan, Minnesota
Provider: University of Minnesota Extension Service
Contact Name: Gary Wyatt,
(507)375-1275 (phone)
(507)375-1260 (fax)
wyatt005@umn.edu

Program name: Forest Certification: What You Should Know About this New Marketing Opportunity
Program type: Workshop
Length: 1 day
Cost: Free
Directed to: Landowners and Resource Managers
Overview: Information on: the certification process, the market for certified products, the costs and benefits of certification, minimizing the costs of certification, case studies on stewardship programs, and contact lists for regional and state sources of information on forest management.
Location: Virginia
Provider: Virginia Tech
Contact Name: Shoana Humphries, The Forest Management Trust
6124 SW 30th Ave
Gainesville, FL 32608
Phone: 352-331-2007
Fax: 352-331-3284
sh@foresttrust.org
http://www.fw.vt.edu/forestupdate/Volume13/13.3.4.htm

Program name: Forest and Farmland Fragmentation Workshop: Impacts in the Valley
Length: 1 day
Cost: US $20
Directed to: Landowners

Overview: Virginia's farms and forest are quickly becoming divided into smaller parcels and converted to other land uses. This workshop will explore the causes and effects of land fragmentation and land use conservation strategies available to landowners.
Location: Harrisonburg, VA
Provider: Virginia Tech
Contact Name: Kathy Holm, Valley Conservation Council
504-886-3541
khvcc@intelos.net

Program name: Shiitake mushroom production
Program type: Field Day, Video, Publication, Demonstration
Overview: Use of timber and stand improvement cull trees to grow mushrooms
Location: Virginia
Provider: Virginia State University Cooperative Extension
Contact Name: Andy Hankins
Box 9081
Petersburg, VA 23806
Tel: 804-524-5962
Fax: 804-524-5967
http://web.missouri.edu/~afta/NAC/Institutions/vsuce.htm

Program name: Wild-simulated ginseng production
Program type: Field Day, Video, Publication, Workshop
Overview: Adding value to existing woodlands by ginseng cultivation
Location: Virginia
Provider: Virginia State University Cooperative Extension
Contact Name: Andy Hankins
Box 9081
Petersburg, VA 23806
Tel: 804-524-5962
Fax: 804-524-5967
http://web.missouri.edu/~afta/NAC/Institutions/vsuce.htm

Program name: Goldenseal production
Program type: Field Day, Video, Publication, Workshop, Research
Overview: Adding value to existing woodlands by goldenseal cultivation
Location: Virginia
Provider: Virginia State University Cooperative Extension
Contact Name: Andy Hankins
Box 9081 Petersburg, VA 23806
Tel: 804-524-5962 Fax: 804-524-5967
http://web.missouri.edu/~afta/NAC/Institutions/vsuce.htm

Program name: Wild crafting native herbs
Program type: Workshop
Overview: Harvest and sale of woodland plants for profit
Location: Virginia
Provider: Virginia State University Cooperative Extension
Contact Name: Andy Hankins
Box 9081
Petersburg, VA 23806
Tel: 804-524-5962
Fax: 804-524-5967
http://web.missouri.edu/~afta/NAC/Institutions/vsuce.htm

Program name: Woodland Options (to be implemented spring 2001)
Program type: Web-based course
Length: Approximately 8 weeks
Directed to: Forest landowners
Overview: Internet-based course that will allow landowners the flexibility of receiving natural resource management information, skill, and techniques in their own home. Participants will view video and slide shows with audio and will complete basic but meaningful activities designed to reinforce concepts learned in the course.
Location: Blacksburg, Virginia
Provider: Virginia Forest Landowner Education Program
Contact Name: Dylan Jenkins, Virginia Forest Landowner Education Program
Virginia Tech Department of Forestry
216-B Cheatham Hall (0324)
Blacksburg, Virginia 24061
Phone: 540-231-6391
Fax: 540-231-333
dylan@vt.edu
Counseling Available: Participants will be matched with a knowledgeable forest landowner and professional forester from their region who will act as a "mentoring team" throughout the course.

Program name: International Programs For Agriculture and Natural Resources
Program type: Forestry and Agroforestry
Length: Courses can be for any length of time from one day to six months. However, most training programs run from 1-3 weeks.
Location: Florida
Provider: University of Florida
2039 McCarty Hall
Box 110282

Gainseville, FL
32611-0282
Contact Name: Maria Cruz/ Dr.P.K.Nair (Agroforestry Centre0
Phone: (352) 392-1965
Fax: (352) 392-7127
mic@gnv.ifas.ufl.edu

Program name: Pine straw production in agroforestry
Program type: Field Day, Publication
Location: Arkansas
Provider: Arkansas Cooperative Extensions Service
Contact Name: Catalino Blanche
6883 South State Hwy 23
Tel (501) 675-3834
Booneville, Arkansas 72927
Fax (501) 675-2940

Program name: Working Trees series
Program type: Workshop, Publication, Display
Overview: Livestock, shelter, snow management
Location: Nebraska
Provider: USDA Forest Service, Natural Resources Conservation Service
Contact Name: Bruce Wight
East Campus, University of Nebraska Lincoln 68583-0882
Tel: 402-437-5178 ext. 24
http://web.missouri.edu/~afta/NAC/Institutions/nac.htm

Program name: Green side up
Program type: Video
Overview: General tree planting and seedling care
Location: Nebraska
Provider: USDA Forest Service
Contact Name: Kim Issacson
East Campus, University of Nebraska Lincoln 68583-0882
Tel: 402-437-5178 ext. 13
http://web.missouri.edu/~afta/NAC/Institutions/nac.htm

Program name: Soil Bioengineering
Length: 32 hours
Cost: None

Directed to: Individuals who plan, design, or install conservation practices and who anticipate they will be utilizing small, simple soil bioengineering systems or those that will be coordinating work to be done with other may attend.
Overview: This course describes how vegetation and structures can be used together in attractive environmentally compatible and cost-effective ways for protecting upland slopes, streambanks and shorelines. Methods and construction techniques for soil bioengineering systems on small, uncomplicated sites are covered in detail with planning.
Location: Fort Worth, Texas
Provider: USDA Natural Resources Conservation Service
Contact Name: Don Holley, USDA Natural Resources Conservation Service
National Employee Development Center
P.O. Box 6567, Fort Worth, TX 76115
dholley@ftw.nrcs.usda.gov
http://www.ftw.nrcs.usda.gov/nedc/courcses.html

Program name: Forestry/Agroforestry Soil-Based Interpretations
Length: 32 hours
Cost: None
Entrance requirements: Background knowledge of soil survey procedures, plot data collection techniques and concepts in the use and development of soil-based interpretations is prerequisite. A thorough review of Part 537 of the National Forestry Manual is also required.
Directed to: NRCS and other agency employees who are involved in the development of soil-based interpretations for forestry and/or agroforestry may attend.
Overview: The course is designed to enable foresters, soil scientists, and other specialists to develop soil-based interpretations related to forestry and agroforestry.
Location: Fort Worth, Texas
Provider: USDA Natural Resources Conservation Services
Contact Name: Eddye Robertson
Phone: 817-509-3250
Fax: 817-509-3271
eroberts@ftw.nrcs.usda.gov
http://www.ftw.nrcs.usda.gov/nedc/courses.html

Program name: Managing Forest Ecosystems
Length: 2 weeks
Cost: $2500 (includes tuition, food, lodging, local transportation, and supplies)
Directed to: Natural resource manager, regulators and scientists, especially biologists, silviculturists, and other natural resource professionals.
Overview: This course defines Ecosystem Management and provides concepts and operational techniques that will enable a resource manager to apply ecosystem

management principle. Although forest ecosystems are emphasized, aquatic ecosystems are also discussed.
Location: Georgetown, SC
Provider: Department of Forest Resources, Clemson University
Contact Name: Dr. Charles A. Gresham
Baruch Forest Science Institute
P.O. Box 596
Georgetown, SC 29442
Phone: 843-546-1013
Fax: 843-546-6296
CGRSHM@Clemson.edu
http://www.fs.fed.us/biology/education/

OTHER: Non-Credit

Program name: Australian Master TreeGrower Program
Program type: Each Program is different, they are run independently and they are tailored to the needs and requirements of the organizing bodies and landowners to suit regional needs and requirements.
Length: 8 weeks
Cost: $100
Directed to: Landowners
Entrance requirements: Committed landowners
Overview: The Australian Master TreeGrower Program is an exciting program offered to landholders and there supporters who can make a significant contribution to the development of farm forestry in their region.
Location: Australia
Provider: Partnership between the Dept of Forestry, local regional coordinating groups and agencies and landholders with the assistance of forest industry, extension officers and researchers.
Contact Name: Rowan Reid (03) 8344 5011
rfr@unimelb.edu.au
http://www.mtg.unimelb.edu.au/

Program name: Tropical Agroforestry
Program type: Lectures, seminar and workshop
Length: 10 weeks
Cost: 6930 (pounds)
Entrance requirements: The course provides training for holders of Degrees or Diplomas in forestry, agriculture, and allied subjects, preferably with at least two years experience in government, commercial or private forestry, farming or advisory activities.

Overview: Combines four major components: agroforestry, forestry, agriculture, and extension methods. It provides vocational training for the introduction or improvement of agroforestry systems, participatory forestry, farm woodlands, silvopastoral systems, and other compatible mixtures combining trees, crops and also farm animals. The objectives are to examine the economic and environmental benefits of agroforestry systems; to understand the ecological principles and management related to integrating tree cultivation and farming practice; extension programmes for introducing or improving agroforestry scheme; communication and presentation skill and project preparation, implementation, management and appraisal.
Location: Edinburgh, UK
Provider: Institute of Ecology and Resource Management, University of Edinburgh
Contact Name: Vikki Hilton, Schools of Forestry and Ecological Sciences
Institute of Ecology and Resource Management, Darwin Building
The King's Building, Mayfield Road, Edinburgh EH9 3JU
Tel: +44(0)131 650 6439
Fax: +44(0)131 662 0478
vikki.hilton@ed.ac.uk

Program name: Marketing of Tree and Forest Products
Length: 3 weeks
Cost: US $3950
Directed to: Middle management personnel in forestry
Overview: This course is designed to provide middle management personnel in forestry departments and community forestry programmes with the skills needed to explore and develop the link between forest utilization and the development of markets for tree and forest products.
Location: Bangkok, Thailand
Provider: Kasetsart University
Contact Name: Dr. Somsak Sukwong, Director
Regional Community Forestry Training Center, Kasetsart University
PO Box 1111, Bangkok 10903 Thailand
Fax: 662-561-4880
Email: ftcsss@nontri.ku.ac.th
http://www.itto.or.jp/newsletter/v7n1/31CourS1.html

Program name: Agroforestry tree domestication
Length: 1 week
Location: Nairobi, Kenya
Provider: International Centre for Research in Agroforestry
Contact Name: J.Beniest@cgiar.org
http://www.icraf.cgiar.org/res_dev/prog_5/grtrain/trn_tabl.htm

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Program name: Information management
Length: 1 week
Directed to: Information specialists
Location: ICRAF Headquarters, Nairobi, Kenya
Provider: International Centre for Research in Agroforestry
Contact Name: J.Beniest@cgiar.org
http://www.icraf.cgiar.org/res_dev/prog_5/grtrain/trn_tabl.htm

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Program name: Team building for agroforestry research
Length: 3 days
Directed to: Regional research team
Location: Region
Provider: International Centre for Research in Agroforestry
Contact Name: J.Beniest@cgiar.org
http://www.icraf.cgiar.org/res_dev/prog_5/grtrain/trn_tabl.htm

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Program name: Agroforestry interventions for the Zambezi basin
Length: 3 days
Directed to: Extensionists
Location: Region
Provider: International Centre for Research in Agroforestry
Contact Name: J.Beniest@cgiar.org
http://www.icraf.cgiar.org/res_dev/prog_5/grtrain/trn_tabl.htm

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Program name: Agroforestry interventions for eastern Zambia
Length: 3 days
Directed to: Extensionists and farmers
Location: Chipata, Zambia
Provider: International Centre for Research in Agroforestry
Contact Name: J.Beniest@cgiar.org
http://www.icraf.cgiar.org/res_dev/prog_5/grtrain/trn_tabl.htm

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Program name: Agroforestry tree propagation techniques
Length: 1 week
Directed to: Scientists and technicians
Location: Cameroun International Centre for Research in Agroforestry
Contact Name: J.Beniest@cgiar.org
http://www.icraf.cgiar.org/res_dev/prog_5/grtrain/trn_tabl.htm

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Program name: Regional training-of-trainers course on introductory agroforestry
Length: 3 weeks
Directed to: Trainers and educators
Location: Thailand
Provider: International Centre for Research in Agroforestry
Contact Name: J.Beniest@cgiar.org
http://www.icraf.cgiar.org/res_dev/prog_5/grtrain/trn_tabl.htm

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Program name: Community participation in agroforestry research
Length: 1 week
Directed to: Scientists and technicians
Location: Philippines
Provider: International Centre on Agroforestry
Contact Name: J.Beniest@cgiar.org
http://www.icraf.cgiar.org/res_dev/prog_5/grtrain/trn_tabl.htm

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Program name: Agroforestry research: experimental design and participatory research methods
Length: 1 week
Directed to: Scientists
Location: Region
Provider: International Centre for Research in Agroforestry
Contact Name: J.Beniest@cgiar.org
http://www.icraf.cgiar.org/res_dev/prog_5/grtrain/trn_tabl.htm

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Program name: Design of agroforestry experiments
Length: 1 week
Directed to: Scientists
Location: Mexico
Provider: International Centre for Research in Agroforestry
Contact Name: J.Beniest@cgiar.org
http://www.icraf.cgiar.org/res_dev/prog_5/grtrain/trn_tabl.htm

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Program name: Short Training Course
Length: 2-12 weeks
Overview: The topics offered are: Forest Mensuration and Management, Forest Surveying, Forest Economics, Mapping and Aerial Photogrammetry, Silviculture, Forest Research, Systematic Botany, Timber Harvesting, Utilization of Forest Products,

Fuelwood Supply and Charcoal Production, Forest Administration, Forest Policy and Law, Nursery Management, Forest Establishment, forest Protection, Chainsaws, Use of Computer and Programming.
Location: Cyprus
Provider: Cyprus Forestry College
Contact Name: Cyprus Forestry College
CY-4841 Prodromos
Cyprus
Tel: 357-5-462048
Fax: 357-5-462646
Forcollege@cytanet.com.cy

Program name: Agroforestry Introductory Training/Workshop
Program type: Workshop
Length: 2 days
Directed to: Individuals and organizations interested in initiating agroforestry activities.
Overview: To motivate participants and encourage implementation of agroforestry practices.
Location: Nepal
Provider: Nepal Agroforestry Foundation
Contact Name: Nepal Agroforestry Foundation
Koteshwor, Phoolbari (Near Manohar Bridge)
P.O. Box 9594
Kathmandu, Nepal
Tel: 977-1-497672
Fax: 977-1-497672
naf@enet.com.np
http://www.nefof.atfreeweb.com/NAF's%20Training%20courses.htm

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Program name: Home Nursery Training
Length: 2 days
Directed to: Interested farmers, women are encouraged
Overview: To promote on-farm fodder trees and grasses
Location: Nepal
Provider: Nepal Agroforestry Foundation
Contact Name: Nepal Agroforestry Foundation
Koteshwor, Phoolbari (Near Manohar Bridge)
P.O. Box 9594
Kathmandu, Nepal
Tel: 977-1-497672
Fax: 977-1-497672
naf@enet.com.np
http://www.nefof.atfreeweb.com/NAF's%20Training%20courses.htm

Program name: Agroforestry training
Length: 5 days
Directed to: Interested individuals and organizations
Overview: To clarify concepts and benefits of agroforestry through the home nursery approach.
Location: Nepal
Provider: Nepal Agroforestry Foundation
Contact Name: Nepal Agroforestry Foundation
Koteshwor, Phoolbari (Near Manohar Bridge)
P.O. Box 9594
Kathmandu, Nepal
Tel: 977-1-497672
Fax: 977-1-497672
naf@enet.com.np
http://www.nefof.atfreeweb.com/NAF's%20Training%20courses.htm

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Program name: Trainers' Training in Agroforestry
Length: 10 days
Directed to: Leader-farmers, Junior Technicians, Rangers and other interested individuals
Overview: To provide a practice-led intensive course in on-farm agroforestry and development workers.
Location: Nepal
Provider: Nepal Agroforestry Foundation
Contact Name: Nepal Agroforestry Foundation
Koteshwor, Phoolbari (Near Manohar Bridge)
P.O. Box 9594
Kathmandu, Nepal
Tel: 977-1-497672
Fax: 977-1-497672
naf@enet.com.np
http://www.nefof.atfreeweb.com/NAF's%20Training%20courses.htm

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Program name: Fruit Trees Propagation Training
Length: 5 days
Directed to: Farmers with an interest in fruit tree cultivation
Overview: To provide training in propagation and management of fruit trees through a variety of methods.
Location: Nepal
Provider: Nepal Agroforestry Foundation
Contact Name: Nepal Agroforestry Foundation

Koteshwor, Phoolbari (Near Manohar Bridge)
P.O. Box 9594
Kathmandu, Nepal
Tel: 977-1-497672
Fax: 977-1-497672
http://www.nefof.atfreeweb.com/NAF's%20Training%20courses.htm

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Program name: Seed Collection & Production Training
Length: 5 days
Directed to: Interested farmers
Overview: To provide training in fodder tree and grass seed collection, germination treatment, viability and storage.
Location: Nepal
Provider: Nepal Agroforestry Foundation
Contact Name: Nepal Agroforestry Foundation
Koteshwor, Phoolbari (Near Manohar Bridge)
P.O. Box 9594
Kathmandu, Nepal
Tel: 977-1-497672
Fax: 977-1-497672
naf@enet.com.np
http://www.nefof.atfreeweb.com/NAF's%20Training%20courses.htm

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Program name: Community Forest Management
Length: 5 days
Directed to: Forest user groups, women agroforestry groups, savings and credit co-operatives
Overview: To strengthen capacities of local institutes and group member in community forest management.
Location: Nepal
Provider: Nepal Agroforestry Foundation
Contact Name: Nepal Agroforestry Foundation
Koteshwor, Phoolbari (Near Manohar Bridge)
P.O. Box 9594
Kathmandu, Nepal
Tel: 977-1-497672
Fax: 977-1-497672
naf@enet.com.np
http://www.nefof.atfreeweb.com/NAF's%20Training%20courses.htm

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Program name: Non-timber Forest Product Management
Length: 7 days
Directed to: Forest user groups, women agroforestry groups, savings and credit co-operatives.
Overview: To strengthen capacities of FUG and co-operative members in the promotion and management of non-timber forest products.
Location: Nepal
Provider: Nepal Agroforestry Foundation
Contact Name: Nepal Agroforestry Foundation
Koteshwor, Phoolbari (Near Manohar Bridge)
P.O. Box 9594
Kathmandu, Nepal
Tel: 977-1-497672
Fax: 977-1-497672
naf@enet.com.np
http://www.nefof.atfreeweb.com/NAF's%20Training%20courses.htm

Disclaimer:

The information in this education and training database is in no way complete and concise. This is due to the fact that there have been changes in the number and type of trainers and, in many cases, the providers of the programs offer a wide variety of courses at various times throughout the year and in different locations. As well, because many organizations offer varied, non-advertised information or programs to their members, or to a select group of people, it is difficult to list all of these programs. The database identifies some of the key providers and some of the programs they offer. To obtain a complete list and particulars about a program or course, contact information for the providers has been listed.

Appendix C: International Agroforestry Internet Web Search

1. International Centre for Research in Agroforestry

IRAF conducts strategic and applied research, in partnership with national agricultural research systems, for more sustainable and productive land use. It has five research and development themes: diversification and intensification of land use through domestication of agroforestry trees; soil fertility replenishment in nutrient-depleted lands with agroforestry and other nutrient inputs; socioeconomic and policy research to allow policies that will benefit smallholder farmers; acceleration of impact on farm by ensuring that research results are used; and capacity and institutional strengthening through training and the dissemination of information.

www.icraf.cgiar.org

2. Association for Temperate Agroforestry

AFTA is a nonprofit, membership organization which promotes research and educational activities related to agroforestry. The Association for Temperate Agroforestry (AFTA) is a private, nonprofit organization formed in 1991. The mission of AFTA is to promote the wider adoption of agroforestry by landowners in temperate regions of North America. Agroforestry practices combine trees and shrubs with crops and/or livestock to increase and diversify farm and forest production while conserving natural resources.

www.web.missouri.edu/~afta/

3. EarthKeepers (Community Forester Institute)

Promote discussion and demonstration of a sustainable culture. Project support and training in agroforestry and permaculture. CFI coordinates long term research in agroforestry, perennial and woody agriculture, permaculture designs for sustainable agriculture and natural resource management, and community development programs such as the Eco-village model in northern lower Michigan.

www.traverse.com/earthkeepers

4. Australian Master TreeGrower Program

An Agroforestry and farm forestry outreach. Tree growing information, research articles, courses, contact list, photo gallery, and reference list. The Australian Master TreeGrower (MTG) Program is an 8 week educational package offered by the Dept of Forestry for those committed landholders who can influence the direction of farm forestry in their local region and also nationally. Each Program is different, they are run independently and they are tailored to the needs and requirements of the organizing bodies and landowners to suit regional needs and requirements. The success of the program is due to the diversity, knowledge and enthusiasm that all the landholders bring

to the program. The MTG Program is not an introductory program into Farm Forestry. It is a program for those committed landholders that can make a genuine contribution the development of farm forestry in their region.

www.mtg.unimelb.edu.au

5. Shivalik Seeds

Provide seeds for agro-forestry, horticulture, ornamental, medicinal, and herbal plants. Shivalik Seeds Corporation has been in seed business since early eighties and supplying a wide range of Plant Seeds and Live Material pertaining to Forestry Agro-forestry, Horticultural and Ornamental interests, besides Medicinal and Aromatic Herbs and has played a vital role in enhancing the cause of Research and Environment Conservation on global basis by acting as a source of supplier of reliable seeds from India.

www.shivalikseeds.com

6. Friends of the Trees Society

Promote sustainable living, ecotourism, agroforestry, and ethical wildcrafting worldwide. Friends of the Trees Society is dedicated to doubling the world's forests. This involves doubling the area covered by trees; doubling the number of trees; and, most importantly, doubling the weight of the world's forest biomass. Friends of the Trees Society's mission is to inspire, enable, educate, and assist people to live in harmony with forests and trees. friends of the Trees Society's mission is to publish positive visions of a sustainable world and strategies to get there. There are solutions to world deforestation and the Society describes them through publications, courses and events. Friends of the Trees Society operates at local, regional, national and international levels. Located in Bellingham, Washington, the Friends of Trees offers programs, seminars, and information around the year to interested people.

www.geocities.com/RainForest/4663/

7. USDA National Agroforestry Center

Agroforestry combines agriculture and forestry technologies to create more integrated, diverse, productive, profitable, healthy and sustainable land-use systems. The USDA National Agroforestry Center (NAC) had its origins in the 1990 Farm Bill. It began as a Forest Service effort in 1992 and expanded into a partnership with the Natural Resources Conservation Service in 1995. NAC conducts research on how to design and install forested buffers to protect water quality and develops and delivers technology on a broad suite of agroforestry practices to natural resource professionals who directly assist landowners and communities.

www.unl.edu

8. Agroforestry Research Trust

Welcome to the ART web site! The Agroforestry Research Trust is a non-profit making charity, registered in England, which researches into temperate forests. The Agroforestry Research Trust is a non-profit making charity, registered in England, which researches into temperate agroforestry and into all aspects of plant cropping and uses, with a focus on tree, shrub and perennial crops. We produce several publications and a quarterly journal, and also sell plants and seeds.

www.agroforestry.co.uk

9. Horticulture and Agroforestry Research Center

Howard County facility studies integrated forest and agricultural management, including the farming of specialty crops in tree-shaded areas. The Horticulture and Agroforestry Research Center (HARC) is an interdisciplinary plant science center that conducts research and education programs for the study of plant systems used in agricultural, urban and natural environments. The center integrates research and teaching in agroforestry, horticulture, pest management and natural resource conservation for the general public, the university and the scientific community. Work conducted at the center is designed to provide Missourians with science-based information and programs that will contribute to a stronger agricultural economy and sustainable use of human and natural resources. www.aes.missouri.edu/harc/

10. Forestry Info.Com

A comprehensive forestry web site with information on jobs, different kinds of forestry, tree care, classifieds, and much more, all free. An informative website that offers information on Agroforestry basics, examples of Agroforestry in action, and possible uses of Agroforestry to benefit farmers and landowners.

www.forestryinfo.com/Agroforestry

11. The Center for Integrated Natural Resources and Agricultural Management (CINRAM)

CINRAM is a partner based organization that catalyzes the development and adoption of integrated land use systems. CINRAM links the expertise of the University of Minnesota with the experience and insights of people and organizations who work with, and have an understanding of, opportunities and issues across the landscape. Coordinating and implementing research and extension projects related to agroforestry and other integrated land use systems. Focus is on applied research on the financial impacts of specific agricultural and land use practices, so that farmers and landowners can evaluate potential profits of specific practices. Particular emphasis and experience with economic and financial analysis of growing hybrid poplar as an alternative agricultural crop. Promoting and conducting educational and training activities throughout Minnesota. Serving as a

clearinghouse and referral center for agroforestry and integrated natural resources and agricultural management;
www.cnr.umn.edu/FR/cinram

12. Davies and Company - Consulting Foresters Providing Complete Forestry Services for Western Massachusetts

Welcome! There are a lot of pages on this web site. If you are a landowner, farmer, forester, lumber buyer this website is informative. You can learn the history of forestry, agroforestry practices, intensive management, lumber buying, forest services, and management plans.
www.daviesand.com

13. Colorado State Forest Service

The Colorado State Forest Service (CSFS) is an organization of active support, rather than a regulatory agency. In recent years, because of rapid population growth, increasing demands for "wild" lands, and growing public interest, CSFS has developed a more holistic approach toward the management of Colorado's natural resources. By taking a stewardship role, CSFS encourages landowners to meet their individual objectives and maintain or improve the overall resource condition while considering all values. The CSFS is a forestry outreach service that offers informative aspects of intensive land management, treeplanting guide, nursery information, treebuyers, etc.
www.colostate.edu/Depts/CSFS/index.html

14. Agroforestry.Net

Agroforestry.net is sponsored and maintained Permanent Agriculture Resources (PAR), a private educational and research organization based in Holualoa, Island of Hawaii ("The Big Island"). Since 1989, PAR has been providing agroforestry training and information resources to farmers, extension agents, and other professionals.
www.agroforestry.net

15. Farm forestry in Western Australia

Our site contains a variety of information about farm forestry in Western Australia, including on-line versions of the TreeNote series of information sheets. We hope that this site is useful to revegetation professionals and to landowners interested in commercial tree growing.
www.agric.wa.gov.au/programs/srd/farmforestry/

16. The Kerr Center for Sustainable Agriculture: Agroforestry Practices

Tim Snell, Agroforestry Specialist offers information on the five main areas of Agroforestry practices. He also offers a treeplanting guide to assist landowners and farmers in planting trees. For agroforestry practices to be widely accepted and integrated into existing agricultural enterprises, farmers must be able to accomplish them safely, efficiently, and with tools already available on the farm. Agroforestry practices must be friendly to the farmer, budget, and land. Many tree species are used in a variety of shapes, forms, and configurations and produce benefits as agroforestry components to adjacent crops or livestock. Trees provide many benefits including lumber and forest products; shade and wind protection for crops, livestock, and buildings; erosion control; water and nutrient cycling; and wildlife food and habitat.

www.kerrcenter.com/Publictions/Agroforestry.htm

17. The Agroforestry Program at Cornell

The Agroforestry Program at Cornell offers a multidisciplinary forum for research and education in agroforestry principles, practice and policy. The Cornell Agroforestry program seeks to develop and apply knowledge about this integrative approach to sustainable agriculture and natural resource management.

www.dnr.cornell.edu/cawg/

18. University of Tasmania - Agroforestry

A study of principles and techniques for integration of forestry and agriculture in rural land management of northern Tasmania and elsewhere. Ecological and economic benefits of combining sustainable farm forest management with agriculture are emphasized in field visits and individual projects. History and causes of rural tree decline and rural land degradation; fungal and insect vectors of forest disease and plant/animal interactions are examined in their ecological context. Insect and vertebrate pests of farm trees are identified and methods of control are introduced. Principles of whole-farm planning are outlined and other topics for study include site amelioration and environmental impact of trees on farms, species selection, tree establishment and forest silviculture in combination with agriculture, use of wood and non-wood products, marketing and profitability.

www.admin.utas.edu.au/HANDBOOKS/UTASHANDBOOKS/UNITS/U

19. Forest Farming

In forest farming, high-value specialty crops are cultivated under the protection of a forest canopy that has been modified and managed to provide the appropriate conditions. It is a way of utilizing forests for short-term income while high-quality trees are being grown for wood products. Five main areas of specialty crops are mushrooms, herbs, nuts, honey, and botanical products.

www.agroforestry.co.uk/forfarm.html

Appendix D: Course Module Development

This appendix provides detailed description (not offered in the body of this report) of several programs or institutions that could serve as models for developing an agroforestry course in Saskatchewan. In some cases (CAP and SIAST), the process of a developing a new course or program is described, while for the Nova Scotia and Vancouver programs, their evolution is described in further detail.

➢ *University of Saskatchewan Department of Agriculture Certificates in Agriculture Program (CAP)*

The objective of the CAP program is to meet the educational needs of individuals, both men and women, whose farm, job, or family responsibilities make it inconvenient for them to register for on campus Diploma in Agriculture courses. Students can take courses for general interest or to meet the requirements of a specific Certificate program.

Each course required approximately 6-8 hours per week to read course materials and prepare assignments. Some classes have a 1 or 2 day laboratory session in Saskatoon and may have periodic group meetings at learning sites throughout Saskatchewan. There is also a compulsory orientation before the beginning of the course.

Course materials are sent out. Some of the courses also have required textbooks that can be ordered by mail. Saskatchewan Communications Network provides some sessions and courses through the centres throughout Saskatchewan. There are two different certificate programs offered:

1. Crop Production Certificate
2. Farm Business Management Certificate

Fees include a $50 application fee and $324 per 3-credit course. 7 – 3 credit courses must be completed. The student must have a mark of 50% or better in all courses to meet the requirements of a specific Certificate program. The Extension Credit Studies Office is responsible for all administrative matters.

Admission:
Regular Admission – Grade 12 or equivalent

- 17 years of age
- Have sufficient knowledge of Western Canadian Agriculture to benefit from instruction

Special/Mature Admission – 21 years or older you may be selected with recommendation from a provincial extension agrologist or a person of similar

qualifications, or a high school teacher (person must have known you for at least two years).

Probationary Admission – may register for courses on a probationary basis

Students in the CAP program are expected to write final examinations on pre-determined dates at pre-designed centres in the Prairie Provinces. There is no charge for writing a final examination at these centres. If the student is unable to write the final examination at a regular centre, they may apply for establishment of a "special centre". The student is then responsible for making arrangements to write the examination under the supervision of an approved invigilator and for the payment of any fee required.

Following the completion of each course, the student is given a final percentage mark unless an alternate means of evaluation has been approved for that course. A final mark of 50% or better is required to pass a course.

Course Development in the CAP program

Before a course is developed it goes through a number of steps to determine if it will be a success and what is the most efficient method of delivery. The following must be considered:

- Needs assessment is done by the director or other member of faculty to determine demand
- Contact industry, farmers, stakeholders, and the College of Agriculture
- CAP designed for those who can not come to the University for courses
- Certificate classes can be used towards diploma
- CAP level 2 certificate
- Instructional designers work with subject matter experts
- Put material into format that is easy to learn from
- Subject matter determines method of learning (e.g. video, CD)
- Most courses do not require texts (all material is in modules)
- College recommends who the instructor will be for the course

A set of specific guidelines is followed, as the course is prepared.

Guidelines for Approval of Certificate and Diploma Programs

The following are guidelines developed by the Academic Programs Committee to provide a framework for certificate programs. Two types of certificates are identified: Certificate of Successful Completion and Certificate of Attendance. These guidelines were approved by the Academic Affairs Committee of Council in June 1988 and revised by the Academic Programs Committee in May 2000.

Certificate of Successful Completion

The Certificate of Successful Completion must be approved by the Vice-President (Academic) on recommendation of the Dean of Extension and other appropriate Deans, following consultation with the Office of the Registrar and the Academic Programs Committee (and the Extension and Public Service Committee, where such consultation is appropriate).

This certificate is used to signify the successful completion of a course or program of courses appropriate for post-secondary training but not classified as degree-level courses. The topics covered in these courses may be similar to topics covered in degree-level courses, but the distinguishing features are normally differences in the breadth and depth of understanding required for successful completion. It implies the attainment of a standard of proficiency; achievement or promotion appropriate for post-secondary training.

Current certificates of successful completion available at the University of Saskatchewan:

- Business Administration Certificate
- Certificate in Adult and Continuing Education
- Certificate in Agriculture (for example, Crop Production Certificate, Farm Business Management Certificate, etc.)
- Certificate in Ecological Education
- Certificate in Teaching English as a Second Language
- Labour Studies Certificate
- Health Care Administration Certificate
- Prairie Horticulture Certificate

Rationale

As was noted in the Report of the Committee to Review the Role and Mandate of the Extension Division (May, 1996), these post-secondary programs present issues about transfer credit to university programs and "laddering" (where students expect they will be able to move from certificate to degree programs"). Therefore it is appropriate that the Academic Programs Committee would play a role in the approval of the certificate programs. Advice to the Vice-President (Academic) would allow potential issues in this area to be identified. Note that one of the responsibilities of the Extension and Public Service Committee is to make recommendations to APC regarding all Extension Division programs.

Certificate of Attendance

The Certificate of Attendance must be approved by the Dean of Extension Division or the Dean of a college, after consultation with the Vice-President (Academic). It does not imply attainment of a standard of proficiency, achievement or promotion. Instead, it is used to certify satisfactory attendance at a course or program of courses sponsored by the Extension Division or a college at the University of Saskatchewan. Certificates of Attendance available at the University of Saskatchewan:

- Agriculture Business Certificate
- Master Gardener Certificate
- Certificate Crop Protection Consultant Certificate
- Certificate in Agricultural Lifetime Leadership
- This Land Certificate
- Certificate in Human Resource Leadership Development

Before a certificate program is approved, a proposal must be prepared.

Extension Division Guidelines for Approval and Revision of Certificate Programs

These guidelines have been modeled on guidelines established for degree programs and should be used as a general guide. It is the Extension Division's recommended format but it would be advisable to take into account the procedures for program approvals of any colleges involved. It is also recommended that an executive summary and table of contents be provided with any program proposal.

Guidelines from Extension Division Certificate Review Committee (approved June 8, 1998):

Proposed Program Title and Level

- What is the program title?
- Is this a new program or a major revision to an existing program?
- If a major program revision, please indicate if this is a change in program title and, if so, a) the former program title and b) the rationale for change in title.
- Is it a Certificate of Proficiency, Certificate of Successful Completion, or a Certificate of Attendance?

Need for Program and Audience

- Demonstrate the need for the program or program revision.
- In the case of a program revision, is this proposal based on a formal program review?
- Indicate whether formal or informal needs assessment has been conducted.
- If yes, describe the result.

- Describe the intended audience and the likely educational level of the typical entering student.
- Is the intended audience and the likely educational level of the typical entering student
- Demonstrate how this level of certificate is appropriate for the intended audience.

Program Structure and Curriculum

- Provide a full description of the program including:
  - Admission Requirements
  - Course titles and descriptions, including information related to prerequisites, course sequencing, core of elective courses, and whether any courses will be graded on pass/fail basis.
  - Minimum number of hours, credit weights, or courses required to be awarded the certificate.
  - Regulations, if any, regarding how many years may pass before credit for a course taken by a student lapses, that is, either 1) it no longer counts for credit, or 2) the student is required to have the course content review ins not appropriate.
  - Minimum average grade required to be awarded the certificate.
  - Examinations policies and procedures.
  - Length of time it will take the typical student to complete the program.
  - Identify the method of delivery, i.e., face-to-face, distance, combinations, etc. Be as specific as possible.
  - Demonstrate how the structure and curriculum described immediately above will meet the needs identified.
  - State the program objectives clearly.
  - Demonstrate how the curriculum described immediately above will meet the needs identified.
  - Demonstrate how the instructional methods and philosophies match the program objectives.
  - Does the program allow sufficient flexibility, especially in its admission requirements and prerequisites, to meet the needs of mature adult learners?
  - It is intended that this be an ongoing program or one that will only exist for a limited time? If the latter, how long do you expect the program to continue?
  - Suggest some possible unintended outcomes and consequences, both positive and negative. For example, would there be a secondary market for the course materials?
  - Is the proposed program comprehensive and cohesive?

Appropriateness to University/Fit with other programs and/or institutions

- Does the program fit the mission statements of the University and the Extension Division?

- Considering the area of academic expertise of the University of Saskatchewan, is the program one for which we have the necessary expertise? Would it be more appropriate for SIAST or another University, or for a collaborative program with another institution?
- Describe the relationship of the program to other related courses and programs:
  - within the colleges and departments involved in the program
  - within other colleges at the University
  - within the province
  - within the country
- Is there duplication with other programs? If so, demonstrate why there is still justification to proceed with the program.
- Is there a danger of an incorrect perception of duplication? If so, what strategies can be used proactively to avoid that perception?
- How does the program integrate with other programs at the University? If there are degree level programs in the same area, is there any provision for transfer credit, prior learning assessment, or laddering? If not, how can that be justified?
- Has the transition between new and previous programs been articulated and its impact on students been considered.

Is the Program within the domain of expertise and administrative purview of the sponsoring units?

- What colleges or other educational institutions are likely to have a strong academic interest in this program?
- Have they been consulted? Do they wish to participate? Are they supportive? If not, is there still reason to proceed? (Please provide written confirmation of such consultation in the form of memoranda from appropriate Deans or their designates within the University, or appropriate management employees from other educational institutions.)
- What mechanisms are in place for the planning, monitoring, evaluation and review of the program (e.g. advisory and management committees, industry associations, internal/external consultants needed, cost?)

Resources

- Provide a three-year business plan for the program including projected annual expenses, revenues, and cash flow. In so doing, consider what are the budget (physical, material, and human) resources required to develop, promote, and support the program.
- What are the funding sources for the program (initial development, delivery, material, marketing, maintenance, ongoing revision, evaluation?)
- Can the requirements be met from existing resources or will the program need to draw on additional resources?
- If additional resources are required, how will these be provided?

- Identify any existing resources that will be redirected to this area.
- What is the proposed sharing of any surplus revenue or deficits among the sponsoring college(s), the Division and the University?
- What is the impact on other departments or colleges?
- Outline the development and phase-in timetable. What provisions are in place to meet the timelines?
- Will re-certification of program graduates be necessary that will involve ongoing educational resources?
- What provisions are there for orientation, training and development of the resource personnel in the particular delivery mode?

Marketing of program

- Outline the marketing plan for promotion and publicity of this program and how these measures will reach the intended audience.
- After the various people have approved the proposal, it can be implemented. Different methods of delivery can be used depending on the course content.

➢ *Saskatchewan Institute of Applied Science and Technology (SIAST)*

In order to develop a new credit program at SIAST, a needs assessment must first be completed. The purpose of the needs assessment for a proposed new credit program is to identify and document a training and/or education need. The proposers must provide information and analysis to support the development of a new credit program. The development of the needs assessment is primarily a division responsibility. Assistance is available from the Consultants in the Program Planning and Development Department.

Following identification of the initiative in the approved Business Plan, the Dean of the Division and the Director, Planning, Research and Development will review and approve the completed needs assessment for a new credit program (format #1) and will forward the proposal to Dean's Council for endorsement, as per the Academic Authorities Grid Policy #308.

Development of an implementation proposal may commence once Dean's Council has endorsed the need for the program.

Steps for Approval of the Needs Assessment for New Credit Program

1. Identification of a new program initiative may come from a variety of sources: Faculty, Program Advisory Committees, Regional Employment and Training Needs Assessment Reports, Industry, External Sources, Government.

2. New program proposals may be identified in the Business Plan (if applicable) by the Dean of the Division and the Vice-President, Programs.
3. Assignment by the Director of Planning, Research and Development (PR & D) of a Consultant from Program Planning and Development (PPD) to the needs assessment project.
4. If the need for the program is identified by an industry association or government department, the documentation from the association or government department would replace Section 1.2 (Methodology) in the Needs Assessment format #1. Completion of the format is still required.
5. Preparation of the needs assessment proposal (format #1) by the proposer. Consult with the PPD Consultant is assistance is required to complete the needs assessment proposal.
6. Review and approval of the needs assessment by the Dean and Director PR & D.
7. Endorsement of the need for the program by the Deans' Council.

➢ *Nova Scotia Department of Natural Resources Woodlot Management Home Study Series*

The Nova Scotia Department of Natural Resources has developed the program as an educational approach designed to help the woodlot owners understand integrated resource management. "Introduction to Silviculture" was originally produced as a co-operative effort between the Canadian Forestry Service and the Department of Lands and Forests in 1987 and has been updated in 1994.

This series is intended to help understand the concepts of good forest management as they apply to the woodlot. Because forest management is such a broad topic, this series is divided into several study modules. These 10 study-at-home modules cover many aspects of forest resource management, including:

- Introduction/Getting More from Your Woodlot
- Principles of Forest Stewardship
- Introduction to Silviculture
- Harvesting Systems
- Stand Spacing
- Wildlife and Forestry
- Stand Establishment
- Chain Saw Use and Safety
- Woodlot Ecology
- Wood Utilization and Technology
- Woodlot Recreation
- Managing Woodlot Finances

At the end of each chapter is a self-answer quiz. It is important to complete each quiz, as your answers will indicate whether you have understood the chapter. After a module is studied at home, field days will be arranged to review the material and show how it applies to woodlot situations.

The intent is to develop modules that review all woodlot management activities, including woodlot road and fire pond construction, boundary line maintenance and survey, woodlot equipment, and woodlot finances.

According to Tim Whynot, an extension forester with the Nova Scotia Department of Natural Resources, the cost of developing modules varies. Costs of module development generally run between $5,000 and $10,000 depending on the level that they do in-house. Hardcopies of modules are sent out one at a time. When the student returns an evaluation form, the next module is sent out. This helps to ensure that the modules the student receives is completed. A database of names is kept and a quarterly newsletter is sent out to notify them of forestry events.

Some things that will be learned from the Woodlot Management Home Study Course modules and the field days are:

- The silvic characteristics of the common native softwood and hardwood trees of Nova Scotia;
- The major factors that affect stand growth and development;
- The use of silvic and growth information and the silviculture techniques to increase the productivity and quality of your woodlot stands;
- How these forest management activities, combined with patience and commitment will increase the long-term value of your woodlot;
- How to incorporate all aspects of integrated resource management to develop the tremendous potential of you woodlot.

The modules can be ordered from the Nova Scotia Natural Resources Department. Four of the modules are currently available online at http://www.gov.ns.ca/natr/regional/extension/homestudy.html. Shortly all the modules will be available online.

➢ *Vancouver Island Master Woodland Manager Forest Renewal BC Small Woodlands Program*

This curriculum was produced for woodland owners on Vancouver Island in 1999. It was developed by Resource Extension and Development Partners, a Campbell River based forestry and community education. According to Nancy Halvorson with the FRBC Small Woodlands Program of BC, the contract for development and delivery of the curriculum had a maximum value of $70,300. The government funds the program, which started in February 1999 and was up and running quickly.

The Master Woodland Manager Program is based on the program from Oregon State University. Many of the concepts, articles, and graphics presented are borrowed from other sources such as:

- Oregon State University Extension Service for handout and curriculum outlines
- Federation of BC Woodlot Associations

- Illustration from The Woodland Steward by James Fazio
- Research Branch, Ministry of Forests for Extension Basics Workshop materials

It takes approximately 60 hours to complete the 8 modules. By the end of the course the Master Woodland Manager trainees should have skills to:

- Serve as a catalyst for small-scale forest management on Vancouver Island by hosting tours, demonstrations, and workshops; conducting one-on-one visits on their woodlands; speaking to community groups about forestry; and other mechanisms.
- Assist landowners to identify their own goals and objectives for managing their forestland.
- Help landowners identify various management opportunities on their properties.
- Provide reference materials and referrals to landowners for forest management and problem identification.
- Assist landowners to make initial diagnoses for tree diseases and insect problems on their properties, and teach landowners how to use disease and insect damage identification keys.
- Explain the importance of a fire protection and describe the elements of a fire protection plan to landowners.
- Teach landowners the steps in conducting various types of forest inventories. Demonstrate proper seedling handling and planting, proper site placement, and proper stock type to land owners
- Demonstrate proper seedling handling and planting, proper planting site placement, and proper stock type to landowners.
- Describe potential non-timber forest product options to landowners.
- Explain techniques for protecting sensitive sites during logging.

There are currently 33 master woodland planners. Since small numbers are desirable, they were trained through three separate courses. The Master Woodland people are trained and then volunteer back 60 hours to training others. The project is in contact with approximately 30,000 eligible landowners. During a needs assessment the committee found that people wanted one on one visits, guidebooks, training and courses. There is currently a huge demand for training and delivery has been a success. Copies of the Woodland Workbook are available from Oregon State University Extension Service for US$41.50.

Appendix E: Saskatchewan Communications Network

(An example of a delivery methodology that could be applied to to an Agroforestry course in Saskatchewan)

The Saskatchewan Communications Network bridges the gap between traditional educational methods and telecommunications-based education and training. This network is built upon a delivery system, which integrates Saskatchewan's fiber optic system with satellite carriage to provide students wit immediate access to an instructor's classroom from a distance. Using this technology, the Training Network coordinates the delivery of programs from educational institutions, businesses, and professional organizations.

The University of Saskatchewan, University of Regina, and the Saskatchewan Institute of Applied Science and Technology (SIAST) offer a variety of Televised Distance Education courses every year. The students meet at a local SCN receive site at the designated time to view a televised presentation, participate in local and televised discussions, and interact with your course instructor and other students throughout the province.

The SCN Training Network provides Saskatchewan people with opportunities for formal education and training in over 150 communities. The province's universities and SIAST work closely with SCN and the Regional Colleges to deliver credit programs to more than 180 Saskatchewan classrooms. SCN's Training Network gives people access to credit programming in or near their own communities.

Government, corporations, and other organizations have utilized SCN's Training Network for satellite conferencing. SCN provides an economical training system to help businesses and organizations deliver seminars and/or training programs across Saskatchewan. Satellite conferencing is an efficient, economical, and effective way to simultaneously communicate with a dispersed audience.

Method of instruction:

Classes are delivered through the SCN closed circuit network and/or through independent home study videos and print packages. These classes will have study guides/manuals and textbooks as part of their course packages. Lectures will be given on the SCN network and/or on pre-taped videos provided directly to the student. Students are given the opportunity to talk to their instructors and have their questions answered during SCN broadcasts and/or during designated tutorial phone sessions. Midterm and final exams will be written in all classes and these will be held at the SCN sites.

Potential for using SCN for Agroforestry Program:

- There is no cost for receiving broadcasts
- Cost at source is variable ($500-2000 per broadcast depending on content)
- Video broadcasting is very good for demonstration such as labs (compared to textbooks)
- It is also possible to use VCR tapes but video processing is better if interaction is necessary
- Audio conferencing is best when used in small groups
- Video conferencing would not be good for an woodlot and agroforestry management program since the technology to use it is not available at all locations across Saskatchewan
- Multimode incorporates different methods of delivery into a program
- Can target certain groups with different modes of delivery
- Developing interactive CD's at SCN
- If strictly information is needed for content then information packages and CD's are good but satellite works best when interaction is beneficial
- One problem with distance education is how all of the people can access specialists on the course topic. Broadcasting allows access.
- Web-based courses can also use chat rooms
- SCN delivers programs but does not develop them
- Developing an woodlot and agroforestry management program would be similar to the biotech program being developed in that it is multidisciplinary. This takes years to develop.

According to Director Frank Harrington, the costs of developing the program without more information on the content. Preparation also has to take place. Who does it? How? Where? Until the content is determined, it is difficult to answer these questions.

Appendix F: Focus Group Moderator's Guide

1.0 Introduction

1. Introduce yourself and Trimension Training and Consulting Group. Thank the participants and introduce the topic for discussion- Education and Training Needs. Recently a survey was performed with a number of landowners and businesses in the woodlot management/ agroforestry sector. We will present some of the findings and would like feedback on the validity of those findings from your perspective.

2. Explain the function of focus groups- to further explore the topic area with a group of landowners to improve proposed services. Any information gained today will be helping to create woodlot management training programs in Saskatchewan, and will have the potential to help landowners who in one form or another are (or want to be) involved in the woodlot management sector in Saskatchewan.

3. Explain that there are no correct answers – only their opinions.

4. The goal of the focus group is not to gain consensus in the group, but rather to hear from everyone.

5. Discussions should be carried out with one person speaking at a time – no side discussions please.

6. Explain the group will be audio-taped, which will be allow us to transcribe the results of the focus group when we are done. The transcriptions are only for that purpose and will be kept confidential. Anonymity will be maintained throughout the session.

7. The results of this focus group will be summarised and incorporated into the final report.

8. Explain you will not be offering your opinions during the discussion. What we think of know about this subject is not important here today. We want to hear the feelings and opinions of participants.

9. Introduce all participants.

10. Any questions before we begin?

2.0 Confirmation of Survey Findings

Prior to conducting this focus group, Trimension Group conducted 100 telephone interviews to gather information from Saskatchewan landowners in the woodlot management/ agroforestry sector, as well as those businesses who buy wood fibre from these landowners. The following questions are related to the findings of this research. We would like to solicit your response as to how well these findings represent your general opinions.

2.1 Current Woodlot Management Practices in Saskatchewan

The majority of survey respondents are currently undertaking woodlot management practices for primarily environmental reasons, followed by economic reasons. However, those who were not practicing any woodlot management cited a number of reasons why: too expensive, too time-consuming, lack of market incentives and a lack of knowledge about basic management practices.

1. Is this the case and are the reasons given for undertaking woodlot management accurate? Why or why not?

2. Are the reasons given by those who are not currently practicing woodlot management accurate? Why or why not?

3. What are the reasons you are, or are not, undertaking woodlot management?

The majority of respondents indicated that they were interested in acquiring more knowledge about basic management practices, but many were unaware about what specific training needs exist in the province. However, the survey respondents did indicate that basic business development, the environment and both basic and intensive management practices were all areas they would like to have training in themselves. Would you agree that these are the areas in which training is required in Saskatchewan?

4. What broad area of training are you most interested in?

5. Are there any specific management practices you would like to learn about? For what purpose? Environmental? Economical?

2.2 Providing the Training

91% of respondents indicated that they would take advantage of training if it were available in the province. The majority identified informal (non-credit) as the preferred type of training, with the preferred format being a combination of self-study/classroom and field exercises.

6. Do you agree that this would be the best method of training/education delivery?

7. Would you take advantage of the training if it were available in this manner? Why or why not?

There is a home study, non-credit Woodlot Management Home Study Program in Nova Scotia, directed to those who want to learn more about managing their woodlands. The course is composed of several modules, including;

- *Introduction/Getting More from Your Woodlot*
- *Principles of Forest Stewardship*
- *Introduction to Silviculture*
- *Harvesting Systems*
- *Stand Spacing*
- *Wildlife and Forestry*
- *Stand Establishment*
- *Chain Saw Use and Safety*
- *Woodlot Ecology*
- *Wood Utilization and Technology*
- *Woodlot Recreation*
- *Managing Woodlot Finances*

Participants are sent a workbook for each module which they work through until it is completed, and then they receive the next module. The program, sponsored by the Nova Scotia Department of Natural Resources, is free of charge and is available throughout Canada.

8. Would this type of program be applicable to the needs of Saskatchewan woodlot managers?

9. Would you participate in this type of home study program?

10. Even though the course is free to participants, someone would have to cover the costs. Who do you think should pay for this type of program?

While the survey respondents did not indicate a preference for satellite or internet based training, these types of courses may have several advantages for the woodlot managers. For rural producers, there is the potential for increased accessibility and higher enrolment numbers than would be in an instructor-led course. As well, supplementing these courses with field exercises and instructor consultation on demand is just as effective. By keeping the development and delivery costs down, tuition will be lower and seem more reasonable to participants.

11. Would this type of satellite or internet training, supplemented by field exercises and instructor consultation on demand, be appropriate to woodlot managers? Why or why not?

2.3 Credit versus Non-credit

The survey results show a preference for non-credit courses, however, the potential may exist in the future for these courses to become credit.

12. Is credit important to you? Why or why not?

13. Do you associate credit with recognized training? Why or why not?

14. If the course were for credit, and led to some type of certification, would you take advantage of it? Why or why not?

15. Would you be willing to pay more for this type of course?

16. Who should accredit these courses and why? (I.e. should they be at the technical institute level or university, or by such groups as the Farm Woodlot Association, or government- Saskatchewan Agriculture and Food)
Should they be industry recognized or joint certified? Why or why not?

17. Should training institutions begin work on developing these courses as credit?

Several reasons were given by respondents as to why this training may be difficult for some to participate in, including: too expensive, too time-consuming and a reluctance to travel.

19. Do you agree that these may be important barriers to consider?

20. Are these issues of concern to you?

21. Are there any other potential difficulties that may face training participants?

22. How could these difficulties be lessened or eliminated?

2.4 Paying for Training

Non-credit woodlot management courses across North America range in price from no-charge to $350.00 for independent home study courses, while credit programs, involving home study, classroom and workshop programs range from $35.00 to $1500.00. Although there are currently no woodlot management programs in Saskatchewan, there are several models that could be adapted. For example, the Certificate in Agriculture Program (CAP) at the University of Saskatchewan offers seven 3-credit, independent study courses (at $324.00 each) towards certification. Each course requires approximately 6-8 hours per week to read course materials and prepare assignments. Course materials are sent out, and some courses are provided by Saskatchewan Communications Network (SCN). At SIAST, several courses are offered once a week, in the evening over a 3-month period. Courses for credit range in price from $100.00 (+books) to $295.00, while non-credit courses range in price from

$75.00 to $185.00. SIAST also offers 6-hour, non-credit workshops that provide hands-on, skill training for less than $100.

23. How long should the course or modules be in terms of hours?

24. Do you understand what tuition costs are based on, and what factors contribute to why some courses cost more than others?

25. Based on these models and what you know about other courses and programs, what would be a reasonable tuition fee?

2.5 Business Survey

The businesses surveyed agreed that more information on training/management practices would benefit both private landowners and the businesses involved in this sector to produce a prosperous industry, as they are currently not being actively approached by private woodlot owners to contract with them.

26. Do you think more education and training with help landowners' business relationships with purchasers?

27. What do you think landowners have to do to make their timber resources viable to purchasers?

2.6 General Questions

28. Who are the ones that have to take the lead and/or be involved in addressing the training needs of Saskatchewan woodlot managers?

29. Will acquiring accreditation be an important matter for private landowners to consider?

30. Are there any points or comments that you would like to make that will assist the Course Development Committee in coming up with recommendations and strategies to address the education and training needs of people managing their private woodlot.